

UNIVERSITY OF LOWELL
BULLETIN OF
UNDERGRADUATE STUDIES
GENERAL CATALOGUE 1978-1981



BULLETIN OF UNDERGRADUATE STUDIES

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Each undergraduate is expected to be familiar with the contents of this publication.

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BULLETIN OF UNDERGRADUATE STUDIES

1978-81



GENERAL CATALOGUE

University of Lowell
Lowell, Massachusetts 01854

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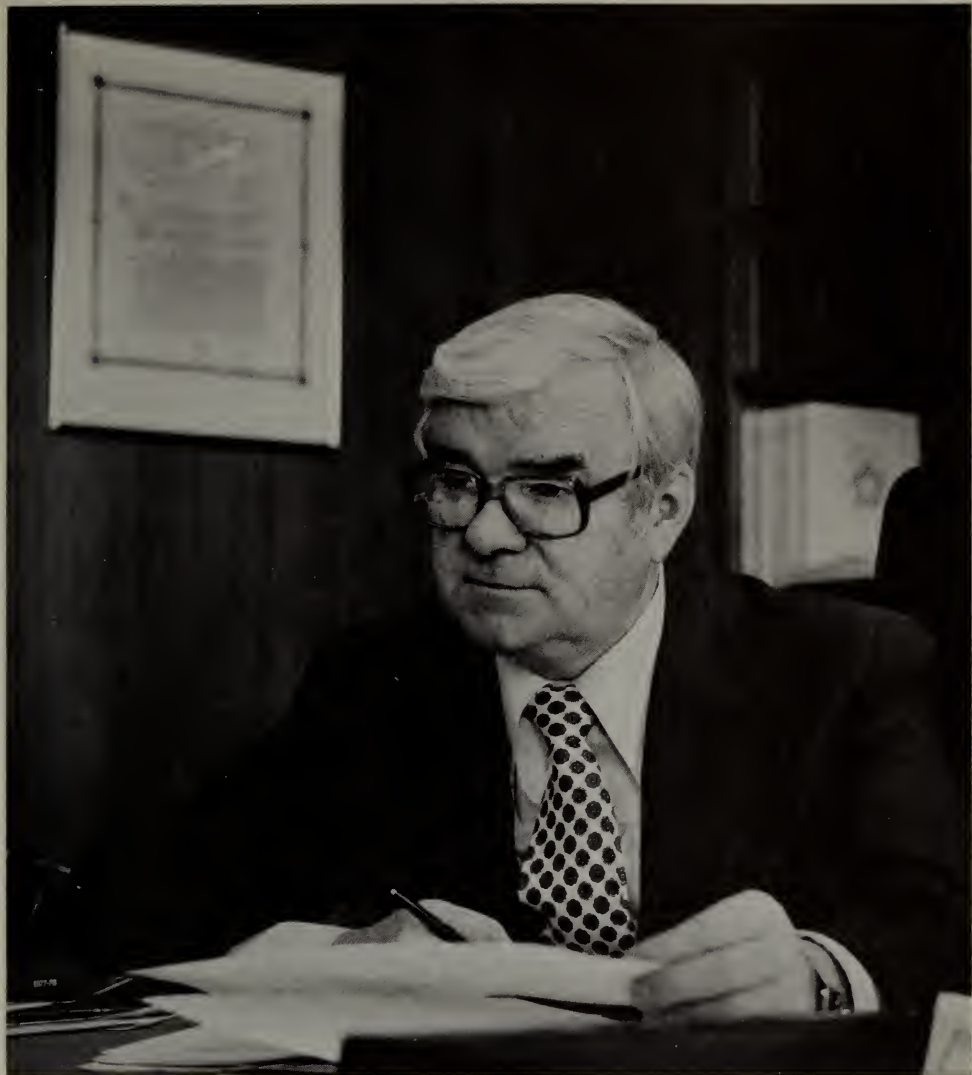
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MESSAGE FROM THE PRESIDENT

The University of Lowell can provide you with a variety of rewarding educational experiences. Much of the knowledge which is our great intellectual heritage and many of the research discoveries which promise to expand and reshape our concepts of mankind and our views of the world are reflected in University courses and curricula. I hope that the University will become a place in which you will grow and develop and that you and the University will be mutually enriched by your presence on campus. This bulletin and its companion publications describe in detail all the essential information concerning undergraduate education. To make the most of your educational experiences, you should familiarize yourself with their contents.

John B. Dyff

TABLE OF CONTENTS

University Calendar	
1978-1979	1
1979-1980	4
1980-1981	7
University Profile	11
Admission Policies	
General Admissions Policies	24
Application Procedures and Requirements for Matriculating Students	26
Application Procedures and Requirements for Non-Matriculating Students	33
Advanced Placement with Course Credit	40
Readmission Procedures for Previously Matriculated Students	42
Physical Examination Requirements	46
Financial Information	
University Charges	49
Rules Governing Massachusetts Residency	53
New England Regional Student Program	55
Financial Aid	56
Veterans Benefits	62
Housing and Food Services	65
Library Services	71
Student Activities	75
Student Regulations	85
Student Services	91
University Academic Policies	101
Aerospace Studies (Air Force ROTC)	139
College of Liberal Arts	
Baccalaureate Degree Programs	144
General College Requirements	146
Instructional Units and Programs	149
Faculty of the College	171
College of Pure & Applied Sciences	
Baccalaureate Degree Programs	178
General College Requirements	180
Instructional Units and Programs	184
Faculty of the College	225
College of Education	
Baccalaureate Degree Programs	232
General College Requirements	232
Instructional Units and Programs	237
Faculty of the College	251
College of Engineering	
Baccalaureate Degree Programs	255
General College Requirements	256
Instructional Units and Programs	259
Faculty of the College	276
College of Health Professions	
Baccalaureate Degree Programs	283
General College Requirements	283
Instructional Units and Programs	288
Faculty of the College	308
College of Management Science	
Baccalaureate Degree Programs	315
General College Requirements	316
Instructional Units and Programs	320
Faculty of the College	332
College of Music	
Baccalaureate Degree Programs	336
General College Requirements	338
Instructional Units and Programs	342
Faculty of the College	353
Board of Trustees	357
University Administration	359
Index	366
Office Directory	372

UNIVERSITY CALENDAR

ACADEMIC YEAR, 1978-1979

FALL SEMESTER 1978

September 1 Friday

Late Registration for Fall Semester
Last Day for Students to Register for Fall Semester
Labor Day (University Closed)
Dormitories Open at 12 noon

S M T W T F S
1 2
3 4 5 6 7 8 9
10 11 12 13 14 15 16
17 18 19 20 21 22 23
24 25 26 27 28 29 30

4 Monday

5 Tuesday

Fall Classes Begin
Drop-Add Period Begins for Registered Students
Last Day for Instructors to Publish Course and Attendance

15 Friday

Requirements for Class Members

18 Monday

Last Day for Registered Students to
(1) Add a Course,
(2) Change Sections Within a Course,
(3) Drop a Course Without Record, and
(4) Change Enrollment Status from

Audit to Credit,

Credit to Audit,

"Pass-No Credit" to Letter Grade, or Letter Grade to

"Pass-No Credit"

29 Friday

Last Day for Students to Complete Work for Incomplete Spring
Semester and Summer Session (1978) Courses

October 5 Thursday

Last Day for Faculty to File Grades for Incomplete Spring
Semester and Summer Session (1978) Courses

S M T W T F S
1 2 3 4 5 6 7
8 9 10 11 12 13 14
15 16 17 18 19 20 21
22 23 24 25 26 27 28
29 30 31

9 Monday

18 Wednesday

23 Monday

Last Day for Faculty to File Changes of Course Grades for Spring
Semester and Summer Session (1978) Courses

Columbus Day (University Closed)

Trustees Vote on Candidates for Summer Degrees

Mid-Semester: At Least One Evaluation Required in Each Course
by Mid-Semester Point

November 1 Wednesday

Last Day for Academically Suspended Students to File
Readmission Applications for Spring Semester (1979)
Probation Status

S M T W T F S
1 2 3 4
5 6 7 8 9 10 11
12 13 14 15 16 17 18
19 20 21 22 23 24 25
26 27 28 29 30

Last Day for Students to File Spring Semester (1979) Petitions for
Intercollegiate Transfer Within the University

Last Day for Students to File Spring Semester (1979)
Applications for Education Programs

Last Day for Students to Drop Courses Without Penalty
(With Course Notation of "W")

Last Day for College Deans to Submit Lists of Seniors Who
Anticipate Completion of Degree Requirements by the End of
December to the Associate Vice President for Instruction
Faculty Advising Period for Student Selection of Spring Semester
(1979) Courses Begins

First Day for Seniors Who Anticipate Completion of Degree
Requirements by the End of May or the End of August to
Confer with Faculty Advisors and to File Programs of
Baccalaureate Studies

8 Wednesday

Friday Class Schedule

17 Friday	Faculty Advising Period for Student Selection of Spring Semester (1979) Courses Ends Last Day for Seniors Who Anticipate Completion of Degree Requirements by the End of May or the End of August to Confer with Faculty Advisors and to File Programs of Baccalaureate Studies
20 Monday	Registration for Spring Semester (1979) Begins at 9:00 am
22 Wednesday	Registration for Spring Semester (1979) Ends at 5:00 pm Thanksgiving recess Begins at 6:00 pm
27 Monday	Classes Resume
December 5 Tuesday	Thursday Class Schedule
7 Thursday	Last Day for Faculty to Administer Quizzes and Examinations Prior to Final Examination Period
13 Wednesday	Last Day of Fall Semester Classes
14 Thursday	Fall Semester Examinations Begin
16 Saturday	Fall Semester Examinations Scheduled
22 Friday	Fall Semester Examinations End Winter Recess Begins at 6:00 pm
23 Saturday	Dormitories Close at 10:00 am
27 Wednesday	Last Day for Faculty to File Fall Semester Grades

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

SPRING SEMESTER 1979

January 18 Thursday	Late Registration for Spring Semester Begins
19 Friday	Late Registration for Spring Semester Ends Last Day for Students to Register for Spring Semester
21 Sunday	Dormitories Open at 12 noon
22 Monday	Spring Classes Begin Drop-Add Period Begins for Registered Students
26 Friday	Last Day for Instructors to Publish Course and Attendance Requirements for Class Members
February 2 Friday	Last Day for Registered Students to (1) Add a Course, (2) Change Sections Within a Course, (3) Drop a Course Without Record, and (4) Change Enrollment Status from Audit to Credit, Credit to Audit, "Pass-No Credit" to Letter Grade, or Letter Grade to "Pass-No Credit"
15 Thursday	Last Day for Students to Complete Work for Incomplete Fall Semester (1978) Courses
19 Monday	Washington's Birthday (University Closed)
22 Thursday	Last Day for Faculty to File Grades for Incomplete Fall Semester (1978) Courses Last Day for Faculty to File Changes of Course Grades for Fall Semester (1978) Courses
March 13 Tuesday	Mid Semester: At Least One Evaluation Required in Each Course by Mid-Semester Point
16 Friday	Spring Recess Begins at 6:00 pm
17 Saturday	Dormitories Close at 10:00 am
21 Wednesday	Trustees Vote on Candidates for Fall Degrees
25 Sunday	Dormitories Open at 12 noon

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28		

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

- 26 Monday** Classes Resume
Last Day for Students to Drop Courses Without Penalty
(With Course Notation of "W")
- 30 Friday** Last Day for Academically Suspended Students to File
Readmission Applications for Fall Semester (1979)
Probationary Status
Last Day for Students to File Fall Semester (1979) Petitions for
Intercollegiate Transfer Within the University
Last Day for Students to File Fall Semester (1979) Applications
for Education Programs
Last Day for College Deans to Submit Lists of Seniors Who
Anticipate Completion of Degree Requirements by the
End of May or the End of August to the Associate Vice
President for Instruction

April

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

- 2 Monday** Faculty Advising Period for Student Selection of Fall Semester
(1979) Courses Begins
First Day for Seniors Who Anticipate Completion of Degree
Requirements by the End of December (1979) to Confer
with Faculty Advisors and to File Programs of
Baccalaureate Studies
- 16 Monday** Patriot's Day (University Closed)
- 17 Tuesday** Monday Class Schedule
- 20 Friday** Faculty Advising Period for Student Selection of Fall Semester
(1979) Courses Ends
Last Day for Seniors Who Anticipate Completion of Degree
Requirements by the End of December (1979) to Confer
with Faculty Advisors and to File Programs of
Baccalaureate Studies
- 23 Monday** Registration for Fall Semester (1979) Begins at 9:00 am
- 25 Wednesday** Registration for Fall Semester (1979) Ends at 5:00 pm
- 27 Friday** University Day (No Classes)

May

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

- 4 Friday** Last Day for Faculty to Administer Quizzes and Examinations
Prior to Final Examination Period
- 11 Friday** Last Day of Spring Semester Classes
- 14 Monday** Spring Semester Examinations Begin
- 23 Wednesday** Spring Semester Examinations End
- 24 Thursday** Dormitories Close at 10:00 am for Non-graduating Students
- 26 Saturday** University Commencement
Dormitories Close at 5:00 pm for Graduating Students
- 28 Monday** Memorial Day (University Closed)
- 29 Tuesday** Last Day for Faculty to File Spring Semester (1979) Grades

June

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

- 12 Tuesday** Registration for Fall Semester (1979) Applicants Begins
- 15 Friday** Registration for Fall Semester (1979) Applicants Ends
- 20 Wednesday** Trustees Vote on Candidates for Spring Degrees

ACADEMIC YEAR, 1979-1980

FALL SEMESTER 1979

August	30 Thursday	Late Registration for Fall Semester Last Day for Students to Register for Fall Semester
September	3 Monday	Labor Day (University Closed)
S M T W T F S	4 Tuesday	Dormitories Open at 12 noon Fall Classes Begin
2 3 4 5 6 7 8		Drop-Add Period Begins for Registered Students
9 10 11 12 13 14 15		Last Day for Instructors to Publish Course and Attendance Requirements for Class Members
16 17 18 19 20 21 22	14 Friday	Last Day for Registered Students to
23 24 25 26 27 28 29		(1) Add a Course,
30	17 Monday	(2) Change Sections Within a Course,
		(3) Drop a Course Without Record, and
		(4) Change Enrollment Status from Audit to Credit, Credit to Audit, "Pass-No Credit" to Letter Grade, or Letter Grade to "Pass-No Credit"
	28 Friday	Last Day for Students to Complete Work for Incomplete Spring Semester and Summer Session (1979) Courses
October	4 Thursday	Last Day for Faculty to File Grades for Incomplete Spring Semester and Summer Session (1979) Courses
S M T W T F S		Last Day for Faculty to File Changes of Course Grades for Spring Semester and Summer Session (1979) Courses
1 2 3 4 5 6		Columbus Day (University Closed)
7 8 9 10 11 12 13	8 Monday	Trustees Vote on Candidates for Summer Degrees
14 15 16 17 18 19 20	17 Wednesday	Mid-Semester: At Least One Evaluation Required in Each Course by Mid-Semester Point
21 22 23 24 25 26 27	22 Monday	Last Day for Students to Drop Courses Without Penalty (With Course Notation of "W")
28 29 30 31	30 Tuesday	Last Day for College Deans to Submit Lists of Seniors Who Anticipate Completion of Degree Requirements by the End of December to the Associate Vice President for Instruction
		Faculty Advising Period for Student Selection of Spring Semester (1980) Courses Begins
		First Day for Seniors Who Anticipate Completion of Degree Requirements by the End of May or the End of August to Confer with Faculty Advisors and to File Programs of Baccalaureate Studies
November	1 Thursday	Last Day for Academically Suspended Students to File Readmission Applications for Spring Semester (1980) Probation Status
S M T W T F S		Last Day for Students to File Spring Semester (1980) Petitions for Intercollegiate Transfer Within the University
1 2 3		Last Day for Students to File Spring Semester (1980) Applications for Education Programs
4 5 6 7 8 9 10		Faculty Advising Period for Student Selection of Spring Semester (1980) Courses Ends
11 12 13 14 15 16 17		Last Day for Seniors Who Anticipate Completion of Degree Requirements by the End of May or the End of August to Confer with Faculty Advisors and to File Programs of Baccalaureate Studies
18 19 20 21 22 23 24	16 Friday	
25 26 27 28 29 30		

19 Monday
21 Wednesday

26 Monday

Registration for Spring Semester (1980) Begins at 9:00 am
Registration for Spring Semester (1980) Ends at 5:00 pm
Thanksgiving Recess Begins at 4:00 pm
Classes Resume

December 6 Thursday

Last Day for Faculty to Administer Quizzes and
Examinations Prior to Final Examination Period

S M T W T F S

1
2 3 4 5 6 7 8
9 10 11 12 13 14 15
16 17 18 19 20 21 22
23 24 25 26 27 28 29
30 31

11 Tuesday
12 Wednesday

13 Thursday
15 Saturday
21 Friday

Thursday Class Schedule
Friday Class Schedule
Last Day of Fall Semester Classes
Fall Semester Examinations Begin
Fall Semester Examinations Scheduled
Fall Semester Examinations End
Winter Recess Begins at 6:00 pm

22 Saturday
26 Wednesday

Dormitories Close at 10:00 am
Last Day for Faculty to File Fall Semester Grades

SPRING SEMESTER 1980

January 17 Thursday

Late Registration for Spring Semester
Last Day for Students to Register for Spring Semester

S M T W T F S

1 2 3 4 5
6 7 8 9 10 11 12
13 14 15 16 17 18 19
20 21 22 23 24 25 26
27 28 29 30 31

20 Sunday
21 Monday

25 Friday

Dormitories Open at 12 noon
Spring Classes Begin
Drop-Add Period Begins for Registered Students
Last Day for Instructors to Publish Course and Attendance
Requirements for Class Members

February 1 Friday

Last Day for Registered Students to
(1) Add a Course,
(2) Change Sections Within a Course,
(3) Drop a Course Without Record, and
(4) Change Enrollment Status from
Audit to Credit,
Credit to Audit,
"Pass-No Credit" to Letter Grade, or Letter Grade to
"Pass-No Credit"

S M T W T F S

1 2
3 4 5 6 7 8 9
10 11 12 13 14 15 16
17 18 19 20 21 22 23
24 25 26 27 28 29

14 Thursday

18 Monday
19 Tuesday
20 Wednesday

Last Day for Students to Complete Work for Incomplete Fall
Semester (1979) Courses
Washington's Birthday (University Closed)
Monday Class Schedule
Last Day for Faculty to File Grades for Incomplete Fall Semester
(1979) Courses
Last Day for Faculty to File Changes of Course Grades for Fall
Semester (1979) Courses

March 11 Tuesday

Mid Semester: At Least One Evaluation Required in Each Course
by Mid-Semester Point

S M T W T F S

1
2 3 4 5 6 7 8
9 10 11 12 13 14 15
16 17 18 19 20 21 22
23 24 25 26 27 28 29
30 31

14 Friday
15 Saturday
19 Wednesday
23 Sunday
24 Monday
25 Tuesday

Spring Recess Begins at 6:00 pm
Dormitories Close at 10:00 pm
Trustees Vote on Candidates for Fall Degrees
Dormitories Open at 12 noon
Classes Resume
Last Day for Students to Drop Courses Without Penalty
(With Course Notation of "W")

April

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

1 Tuesday

Last Day for Academically Suspended Students to File
Readmission Applications for Fall Semester (1980)
Probationary Status
Last Day for Students to File Fall Semester (1980) Petitions for
Intercollegiate Transfer Within the University
Last Day for Students to File Fall Semester (1980) Applications
for Education Programs
Last Day for College Deans to Submit Lists of Seniors Who
Anticipate Completion of Degree Requirements by the
End of May or the End of August to the Associate Vice
President for Instruction
Faculty Advising Period for Student Selection of Fall Semester
(1980) Courses Begins
First Day for Seniors Who Anticipate Completion of Degree
Requirements by the End of December (1980) to Confer
with Faculty Advisors and to File Programs of
Baccalaureate Studies

21 Monday

25 Friday

Patriot's Day (University Closed)
Faculty Advising Period for Student Selection of Fall Semester
(1980) Courses Ends
Last Day for Seniors Who Anticipate Completion of Degree
Requirements by the End of December (1980) to Confer
with Faculty Advisors and to File Programs of
Baccalaureate Studies

28 Monday

30 Wednesday

Registration for Fall Semester (1980) Begins at 9:00 am
Registration for Fall Semester (1980) Ends at 4:00 pm

May

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

1 Thursday

2 Friday

8 Thursday

9 Friday

10 Saturday

17 Saturday

18 Sunday

20 Tuesday

24 Saturday

Friday Class Schedule
Last Day for Faculty to Administer Quizzes and Examinations
Prior to Final Examination Period
University Day (No Classes)
Last Day of Spring Semester Classes
Spring Semester Examinations Begin
Spring Semester Examinations Scheduled
Spring Semester Examinations End
Dormitories Close at 10:00 am for Non-graduating Students
Last Day for Faculty to File Spring Semester (1980) Grades
University Commencement
Dormitories Close at 5:00 pm for Graduating Students
Memorial Day (University Closed)

26 Monday

June

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

10 Tuesday

13 Friday

18 Wednesday

Registration for Fall Semester (1980) Applicants Begins
Registration for Fall Semester (1980) Applicants Ends
Trustees Vote on Candidates for Spring Degrees

ACADEMIC YEAR, 1980-1981

FALL SEMESTER 1980

August 28 Thursday

Late Registration for Fall Semester
Last Day for Students to Register for Fall Semester

September 1 Monday

Labor Day (University Closed)
Dormitories Open at 12 noon

1 2 3 4 5 6
7 8 9 10 11 12 13
14 15 16 17 18 19 20
21 22 23 24 25 26 27
28 29 30

2 Tuesday

Fall Classes Begin
Drop-Add Period Begins for Registered Students
Last Day for Instructors to Publish Course and Attendance Requirements for Class Members

15 Monday

Last Day for Registered Students to
(1) Add a Course,
(2) Change Sections Within a Course,
(3) Drop a Course Without Record, and
(4) Change Enrollment Status from
Audit to Credit,
Credit to Audit,
"Pass-No Credit" to Letter Grade, or Letter Grade to
"Pass-No Credit"

26 Friday

Last Day for Students to Complete Work for Incomplete
Spring Semester and Summer Session (1980) Courses

October 2 Thursday

Last Day for Faculty to File Grades for Incomplete Spring
Semester and Summer Session (1980) Courses
Last Day for Faculty to File Changes of Course Grades for Spring
Semester and Summer Session (1980) Courses

S M T W T F S
1 2 3 4
5 6 7 8 9 10 11
12 13 14 15 16 17 18
19 20 21 22 23 24 25
26 27 28 29 30 31

13 Monday

Columbus Day (University Closed)

15 Wednesday

Monday Class Schedule

20 Monday

Trustees Vote on Candidates for Summer Degrees
Mid-Semester: At Least One Evaluation Required in Each
Course by Mid-Semester Point

28 Tuesday

Last Day for Students to Drop Courses Without Penalty
(With Course Notation of "W")
Last Day for College Deans to Submit Lists of Seniors Who
Anticipate Completion of Degree Requirements by the
End of December to the Associate Vice President for Instruction
Faculty Advising Period for Student Selection of Spring
Semester (1981) Courses Begins
First Day for Seniors Who Anticipate Completion of Degree
Requirements by the End of May or the End of August to
Confer with Faculty Advisors and to File Programs of
Baccalaureate Studies

November 3 Monday

Last Day for Academically Suspended Students to File
Readmission Applications for Spring Semester (1981)
Probation Status

S M T W T F S
1
2 3 4 5 6 7 8
9 10 11 12 13 14 15
16 17 18 19 20 21 22
23 24 25 26 27 28 29
30

11 Tuesday

Last Day for Students to File Spring Semester (1981)
Petitions for Intercollegiate Transfer Within the University
Last Day for Students to File Spring Semester (1981)
Applications for Education Programs

21 Friday

Veterans Day (University Closed)
Faculty Advising Period for Student Selection of Spring
Semester (1981) Courses Ends

Last Day for Seniors Who Anticipate Completion of Degree Requirements by the End of May or the End of August to Confer with Faculty Advisors and to File Programs of Baccalaureate Studies

24 Monday Registration for Spring Semester (1981) Begins at 9:00 am
26 Wednesday Registration for Spring Semester (1981) Ends at 4:00 pm
 Thanksgiving Recess Begins at 6:00 pm

December

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

1 Monday
5 Friday
12 Friday
13 Saturday
20 Saturday
21 Sunday
23 Tuesday

Classes Resume
 Last Day for Faculty to Administer Quizzes and Examinations Prior to Final Examination Period
 Last Day of Fall Semester Classes
 Fall Semester Examinations Begin
 Fall Semester Examinations End
 Winter Recess Begins at 6:00 pm
 Dormitories Close at 10:00 am
 Last Day for Faculty to File Fall Semester Grades

SPRING SEMESTER 1981

January

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

14 Wednesday
18 Sunday
19 Monday
23 Friday
30 Friday

Late Registration for Spring Semester
 Last Day for Students to Register for Spring Semester
 Dormitories Open at 12 noon
 Spring Classes Begin
 Drop-Add Period Begins for Registered Students
 Last Day for Instructors to Publish Course and Attendance Requirements for Class Members
 Last Day for Registered Students to
 (1) Add a Course,
 (2) Change Sections Within a Course,
 (3) Drop a Course Without Record, and
 (4) Change Enrollment Status from
 Audit to Credit,
 Credit to Audit,
 "Pass-No Credit" to Letter Grade, or Letter Grade to
 "Pass-No Credit"

February

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28

12 Thursday
16 Monday
17 Tuesday

Last Day for Students to Complete Work for Incomplete Fall Semester (1980) Courses
 Washington's Birthday (University Closed)
 Monday Class Schedule
 Last Day for Faculty to File Grades for Incomplete Fall Semester (1980) Courses
 Last Day for Faculty to File Changes of Course Grades for Fall Semester (1980) Courses

March

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

9 Monday
13 Friday
14 Saturday
18 Wednesday
22 Sunday
23 Monday

Mid Semester: At Least One Evaluation Required in Each Course by Mid-Semester Point
 Spring Recess Begins at 6:00 pm
 Dormitories Close at 10:00 pm
 Trustees Vote on Candidates for Fall Degrees
 Dormitories Open at 12 noon
 Classes Resume
 Last Day for Students to Drop Courses Without Penalty

April

1 Wednesday

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30		

Last Day for Academically Suspended Students to File Readmission Applications for Fall Semester (1981) Probationary Status
 Last Day for Students to File Fall Semester (1981) Petitions for Intercollegiate Transfer Within the University
 Last Day for Students to File Fall Semester (1981) Applications for Education Programs
 Last Day for College Deans to Submit Lists of Seniors Who Anticipate Completion of Degree Requirements by the End of May or the End of August to the Associate Vice President for Instruction
 Faculty Advising Period for Student Selection of Fall Semester (1981) Courses Begins
 First Day for Seniors Who Anticipate Completion of Degree Requirements by the End of December (1981) to Confer with Faculty Advisors and to File Programs of Baccalaureate Studies
 Patriot's Day (University Closed)
 Faculty Advising Period for Student Selection of Fall Semester (1981) Courses Ends
 Last Day for Seniors Who Anticipate Completion of Degree Requirements by the End of December (1981) to Confer with Faculty Advisors and to File Programs of Baccalaureate Studies
 Registration for Fall Semester (1981) Begins at 9:00 am
 Registration for Fall Semester (1981) Ends at 4:00 pm
 Friday Class Schedule
 Last Day for Faculty to Administer Quizzes and Examinations Prior to Final Examination Period

20 Monday

24 Friday

27 Monday

29 Wednesday

30 Thursday

May

S	M	T	W	T	F	S
				1	2	
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

1 Friday

7 Thursday

8 Friday

9 Saturday

16 Saturday

17 Sunday

19 Tuesday

23 Saturday

25 Monday

University Day (No Classes)
 Last Day of Spring Semester Classes
 Spring Semester Examinations Begin
 Spring Semester Examinations Scheduled
 Spring Semester Examinations End
 Dormitories Close at 10:00 am for Non-graduating Students
 Last Day for Faculty to File Spring Semester (1981) Grades
 University Commencement
 Dormitories Close at 5:00 pm for Graduating Students
 Memorial Day (University Closed)

June

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

9 Tuesday

12 Friday

17 Wednesday

Registration for Fall Semester (1981) Applicants Begins
 Registration for Fall Semester (1981) Applicants Ends
 Trustees Vote on Candidates for Spring Degrees



UNIVERSITY PROFILE

The University of Lowell was established by Chapter 1175, Acts of 1975, General Laws of the Commonwealth of Massachusetts, through a merger of Lowell State College and Lowell Technological Institute. Chapter 1175 directs the University to "provide, without discrimination, educational programs, research, extension, and continuing education services in the liberal arts, engineering and sciences, and in the professions. The University of Lowell shall offer the adult education services of the university extension program . . . and shall, with the approval of the board of trustees and the board of higher education, have general authority to award any earned doctoral degrees, particularly in the sciences, the health professions and music."

Lowell State College and Lowell Technological Institute were established in the last decade of the 19th century as single purpose institutions and were charged with providing instruction in those theories and practical arts which were most suitable to the teaching profession and the textile industry. Lowell State College was chartered by the General Court of the Commonwealth on January 6, 1894, as a teacher-training institution and was assigned the responsibility for providing "the most thorough knowledge of the branches of learning required to be taught in the schools, the best methods of teaching these branches, and right mental training." In 1932, the institution was made a four-year college and was granted the right to confer baccalaureate degrees. In 1960, the college became a multi-purpose institution by initiating non-teaching programs in the liberal arts. During the next decade and a half, the college continuously extended its mission and curriculum offerings at both the graduate and undergraduate levels and was authorized to offer degree programs in education, the health professions, the liberal arts and sciences, and music. From the time of its origin in 1895 as a proprietary textile school, Lowell Technological Institute has provided educational programs of an applied and practical nature. "Science and art will be taught," the original prospectus pointed out, "with a view to industrial and commercial applications" and for "the purpose of improving any special trade or of introducing new branches of industry." The control of the School was transferred to the state in 1918, and in 1928 it was granted collegiate status. In 1953, it became a multi-purpose technological institute. During the last decade, the Institute phased out its textile curricula, extended its curriculum offerings in engineering and technology, the pure and applied sciences, business administration and industrial management, and received authorization to offer degrees through the doctorate.

The merging of Lowell State College and Lowell Technological Institute has brought together two multi-purpose institutions of differing character and orientation and has made possible the creation of a comprehensive university whose strengths and resources are manifestly greater than those possessed by the previous institutions. At the present time, the University has a full-time faculty in excess of 400 and a student enrollment of more than 11,000. The

curricula of the University, which are described in the several catalogues and bulletins of the schools and colleges, encompass the customary disciplines of the liberal arts and sciences, as well as a wide range of professions.

PURPOSE OF THE UNIVERSITY

Recognizing its responsibility as a publically supported institution of higher education, the University of Lowell seeks to discover, integrate, and transmit knowledge to meet the economic, professional, and cultural needs of the Commonwealth. To these ends, the University offers undergraduate and graduate degree programs in business, education, engineering and technology, the health professions, liberal arts, music, and the pure and applied sciences. The University maintains a wide range of continuing-education programs for those individuals who cannot attend classes on a full-time basis because of age, family responsibilities, or economic constraints and for those who seek continuing personal and professional development. The University also provides special business, industrial, health, scientific, and educational seminars and training programs in cooperation with both public and private sectors. Through these educational programs, the University strives to develop individual capacities for rational analysis and effective decision making and to create a basic understanding of our cultural and scientific heritage. Finally, the University has a special mission to continue the positive implementation of Equal Opportunity/Affirmative Action, Title IX, thereby ensuring that all students and employees, and in particular, minorities, veterans, women, and handicapped persons are guaranteed the benefits of a just and equitable system.

ACCREDITATION AND PROFESSIONAL MEMBERSHIPS

The University of Lowell is an accredited member of the New England Association of Schools and Colleges. Professional programs at the baccalaureate level are also accredited by the following national associations:

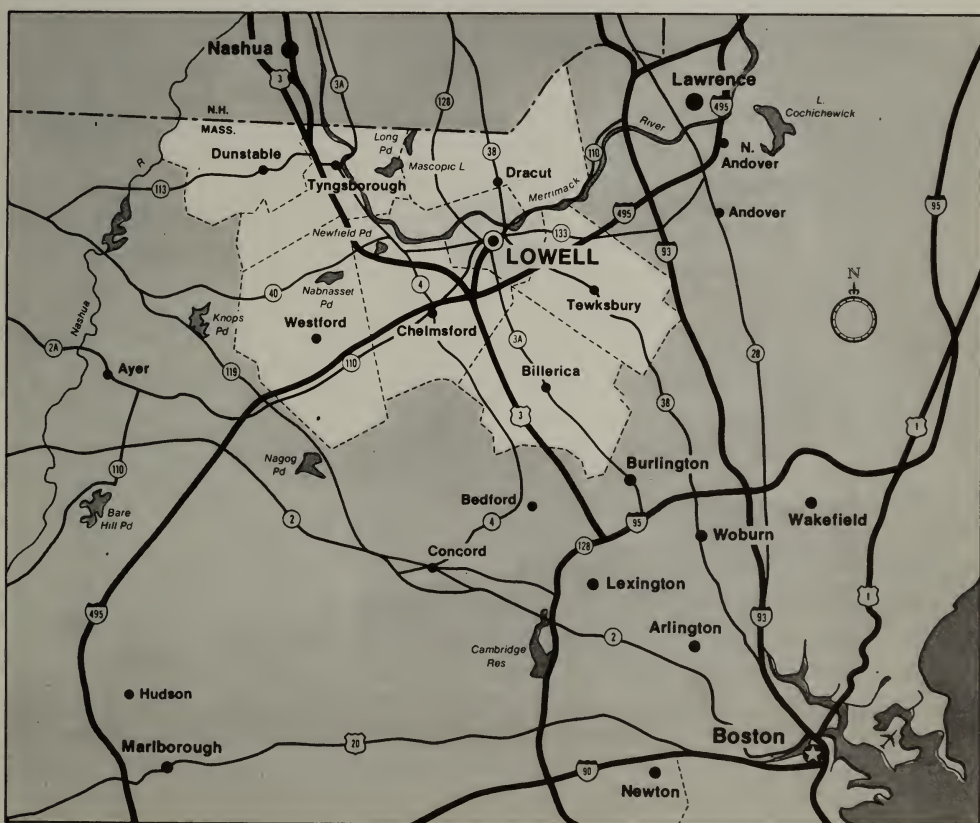
- American Chemical Society
- Engineers' Council for Professional Development
(Chemical Engineering, Civil Engineering, Electrical Engineering,
Mechanical Engineering, and Plastics Engineering)
- National Accrediting Agency for Clinical Laboratory Sciences
- National Association of Schools of Music
- National Council for the Accreditation of Teacher Education
(Elementary Education, Music Education, and Secondary Education)
- National League for Nursing

Accreditation indicates that the University is recognized and approved by regional and national associations concerned with the quality of higher education and it assures that study undertaken here has transfer value to other accredited institutions of higher education. The University is also a member in good standing of the following associations of higher education:

- | | |
|---|---|
| American Association of Colleges
for Teacher Education | College Entrance Examination Board |
| American Association of Colleges of Nursing | National Association of Summer Sessions |
| American Council on Education | National University Extension Association |
| Association for State Colleges and Universities | New England Board of Higher Education |

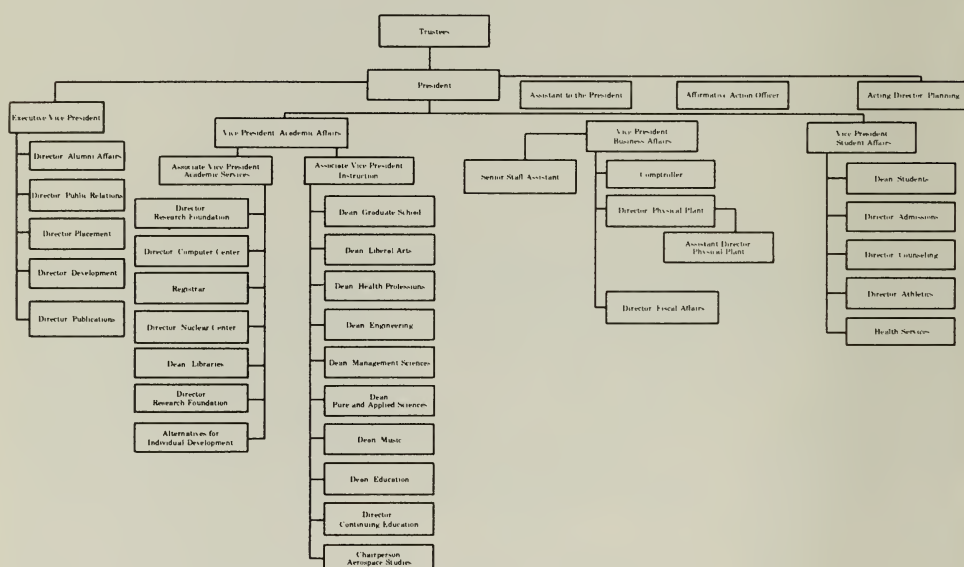
LOCATION OF THE UNIVERSITY

The University of Lowell is located twenty-five miles northwest of Boston and is situated on the northwestern periphery of the City of Lowell. The North Campus is situated on either side of the Merrimack River at the Pawtucket Falls, the source of power which gave rise to America's first industrial city. The South Campus is situated on a bend of the Merrimack River approximately one mile upstream from the North Campus and occupies an elevated site which is midway between the mouths of the historic Middlesex and Pawtucket Canals. The two campuses respectively occupy eighty and thirty acres and are easily accessible by automobile from US Route 3 and Interstate Route 495, by train from Boston (Massachusetts Bay Transportation Authority), and by local and interstate bus lines (Massachusetts Bay Transportation Authority, Continental, and Vermont Transit).



UNIVERSITY ORGANIZATION AND GOVERNANCE

The University is organized into four service areas, each of which is under the supervision of a vice-president. The academic organization of the University has been designed to promote a challenging environment in which creative thinking and educational freedom will permit individual growth and professional competency. Instructional units are grouped in colleges, schools, and departments. The University includes seven colleges and a graduate school, each under the direction of a dean and a college faculty. In addition, an evening school of continuing education operates under a director and in conjunction with the seven colleges and the graduate school. The following diagram characterizes the lines of administrative responsibility within the University.



University Instructional Units

College of Education

The College of Education is located in Coburn Hall (South Campus), which houses both the Office of the Dean and offices of the Department of Curriculum and Instruction and the Department of Educational Foundations. The College of Education offers baccalaureate programs in elementary education and secondary education and graduate programs in curriculum and instruction, educational administration, and reading and language. Clinical aspects of teaching programs are conducted in the public schools of the Greater Lowell and Merrimack Valley areas.

College of Engineering

The College of Engineering is located in Ball Hall (North Campus), which houses both the Office of the Dean and the offices of Departments of Chemical Engineering, Civil Engineering, Electrical Engineering, Mechanical Engineering, Nuclear Engineering, Plastics Engineering, and Industrial Technology. Special classroom and laboratory facilities are located in Ball Hall, Ball Hall Annex, Kitson Hall, and the Nuclear Center.

College of Health Professions

The College of Health Professions is located in Weed Hall (South Campus), which houses both the Office of the Dean and offices of the Department of Clinical Laboratory Sciences, the Department of Health, and the Department of Nursing. Special classroom and laboratory facilities are also located in Weed Hall. Offices of the Department of Physical Education are located in the Costello Gymnasium (North Campus) and Mahoney Hall (South Campus).

Facilities of the College include fully equipped simulated laboratories in the areas of clinical chemistry, clinical hematology, microbiology, and clinical immunohematology. Also included are three simulated nursing laboratories which have the most modern nursing and life-support equipment available. The audio-visual center has carrels which are equipped for self-paced instruction in basic nursing skills.

Clinical experiences for health education, health services administration, medical technology, nursing, and physical therapy programs are conducted in public schools, health agencies, and hospitals of the Greater Lowell and Merrimack Valley areas.

College of Liberal Arts

The Office of the Dean of the College of Liberal Arts is located in Coburn Hall (South Campus). Faculty offices of the College are located in several buildings on both campuses. Offices of department chairpersons are located in the following buildings:

Art	Dugan Hall, South Campus
English	O'Leary Library, South Campus
History & Political Science	Coburn Hall, South Campus
Languages	Coburn Hall, South Campus
Philosophy	Coburn Hall, South Campus
Psychology	Mahoney Hall, South Campus
Sociology	Coburn Hall, South Campus

Facilities of the College include experimental laboratories for animal and human learning, language laboratory facilities, theatre arts workshops, and a performing theatre. Practicum experiences for social science curricula are conducted in social and government agencies of the Greater Lowell and Merrimack Valley areas.

College of Management Science

The College of Management Science is located in Falmouth and Pasteur Halls on the North Campus. The Dean's Office and the Department of Management share facilities on the third floor of Falmouth Hall. The Accounting and Economics Departments are located on the second and third floors of Pasteur Hall.

College of Music

The College of Music, which is located in Dugan Hall (South Campus), occupies one of the more advanced facilities of its kind in the country. Beautifully situated on the banks of the Merrimack River, Dugan Hall contains a concert hall seating one thousand and features an acoustical shell on the stage, an orchestra pit which can be raised and lowered, and a lighting console of sufficient flexibility to permit production of any type of concert from chamber music to opera or any type of theatre from musicals to classical drama. The recital hall, which seats two hundred and fifty, is ideal for student and faculty recitals and houses a Schlicker baroque organ of eleven ranks. Seventy-two practice cubicles, twelve classrooms, and sixteen teaching studios, a recording studio, two electronic piano laboratories and an electronic music laboratory provide basic facilities to study, teach, and perform.

College of Pure & Applied Sciences

Offices of the College of Pure and Applied Sciences are located in Olsen and Olney Halls (North Campus) and in Mahoney and Weed Halls (South Campus). The Office of the Dean is located in Olney Hall. Offices of department chairpersons are located in the following buildings:

Biological Sciences	Olsen Hall, North Campus
Chemistry	Olney Hall, North Campus
Earth & Environmental Sciences	Mahoney Hall, South Campus
Mathematics	Olsen Hall, North Campus
Physics	Olney Hall, North Campus

Modern facilities and equipment in the Olsen and Olney Science Centers, (North Campus) and in Mahoney and Weed Halls (South Campus) include teaching laboratories, undergraduate and graduate research facilities, office-research modules and such service areas as animal quarters, rooms for instrumentation, preparation, temperature and humidity control as well as X-ray, electron microscope (transmission and scanning), greenhouse, and library facilities. Other facilities include a primate research facility, ionospheric research laboratories, a newly completed Nuclear Center, and a new time-sharing computer system. These combined facilities make it possible for students to gain experience with equipment and methods which are characteristic of current techniques in the various science disciplines and areas of specialization.

Continuing Education and Summer School

Continuing education involves all programs, other than the usual undergraduate and graduate offerings, for students whose primary immediate con-

cern is something other than full-time education. Both credit and non-credit programs are in formats principally designed for full-time workers who desire a college education, in-service teachers, professional personnel, housewives, and others in the community who seek educational fulfillment.

A broad spectrum of courses is offered during the late afternoon and evening to fulfill the educational needs of employed persons and others in the Merrimack Valley area who are restricted to part-time attendance. Priority and sequence schedules cater to vocational and professional career development, with emphasis on updating and modifying the individual's occupational preparation base. The matching of academic program with systematic job progress over a period of years provides for a total development of the individual in quest of professional advancement. Offices of the Evening School are located in Cumnock Hall (North Campus).

Two terms of summer school are offered by the University. Although course offerings depend upon student demand and may vary from year to year, summer school courses in recent years have comprised a major portion of the regular academic program. Summer courses are generally taught by full-time faculty of the University and are equivalent to courses which are offered during the fall and spring semesters. Students who wish to accelerate their baccalaureate studies or who wish to make-up courses which they have failed during the regular academic year may pursue summer school courses with the assurance that they are creditable to degree programs of the University. Offices of the Summer School are located in Cumnock Hall (North Campus).

Graduate School

The Graduate School offers advanced studies, including professional training and research, leading to graduate degrees in engineering, science, education, music, management, and nursing. In addition to the day classes intended primarily for full-time graduate students, the Graduate School offers some evening classes through the Evening School mainly for the convenience of part-time students. The courses offered in the evening are equivalent in every respect to those offered to full-time graduate students. Offices of the Graduate School are located in Cumnock Hall (North Campus).

University Service Facilities

Computer Center

The University Computer Center provides the facilities for academic computing in support of classroom teaching and research at both the undergraduate and the graduate level. The central facility consists of a CDC CYBER-71 Computer System with a full complement of peripherals and resources to support batch, remote batch, and interactive time-sharing environments. The computer system provides direct access to its resources through a network consisting of more than 64 interactive terminals. The CYBER-71 Computer System is provided with 98K words of core memory, 350 million characters of disk storage, two

magnetic tape transports, two fast line printers, a fast card reader, and a communications controller with 64 ports. The operating system software includes Assembler language, FORTRAN, COBOL, BASIC, ALGOL, Data Base Management System, and a library of application programs. The Computer Center is located in Olsen Hall (North Campus).



Nuclear Center

The Nuclear Center (North Campus) is a modern, three-story building devoted to research and instruction in various nuclear fields of science and engineering. A nuclear reactor operating at one megawatt is used for instruction of undergraduate nuclear engineers in the principles of reactor physics and reactor operation and of undergraduate radiological sciences majors in the principles of reactor radiation control. Programs of research in biology, chemistry, earth sciences, materials engineering, and physics are actively supported. A 5.5 Mev Van de Graaff accelerator is used mainly for graduate research in nuclear structure and materials engineering, particularly as applied to gathering data for fast breeder reactor design. Sophisticated data processing and handling equipment include a PDP-9 computer, a computer controlled Hewlett-Packard multichannel analyzer, and two Canberra multichannel analyzers of similar function. The center is also equipped with an advanced machine shop, a complete electronic instrument calibration and repair shop, and an assortment of teaching and research laboratories.

Research Foundation

The Research Foundation (North Campus) was established in 1950 as a not-for-profit organization which operates from income derived from research funded by private industry, foundations, and government agencies. Housed in a modern building adjacent to the main resident hall complex of the North Campus, the Foundation contains major support facilities for faculty and student research projects. The Foundation provides a mechanism for the administration and fiscal management of all academic grants and contracts. Two auxiliary enterprises, the Meteorology and Testing divisions, help to defray the overhead costs of the facility. Meteorology services are provided to assist industry and government through the repair and calibration of electronic test equipment with traceability to the National Bureau of Standards. This service is available from the Foundation or its fully equipped mobile laboratory. Also based at the Foundation are the Center for Atmospheric Research and the Center for Schistosomiasis Research.

As part of its close cooperation with the University, the Research Foundation employs both graduate and undergraduate students from the University on a part-time basis. These students gain practical experience which often leads to an advanced degree. In addition to the research which is carried out on campus, research projects are also conducted in Thailand, Belgium, Greece, Italy, Germany, Algeria and other parts of the world where the University is becoming known for its significant expertise. For further information, contact Dr. Edward Alexander, Dean of Research and Director, University of Lowell Research Foundation, 450 Aiken Street, Lowell, Massachusetts 01854.



UNIVERSITY COUNCIL

Subject to the final authority of the Board of Trustees, the University Council is the principal legislative and policy-making advisory body of the University community. In accepting this responsibility, the Council recognizes a duty to respect and safeguard the civil liberties, academic freedoms, and professional ethics of individual members of the University, associated groups of persons within the University, and individuals or groups invited to the University. For this purpose, members of the student body, the faculty, the administration, the professional staff, and the non-professional staff have equal claim to the protection of the Council.

Powers and Functions of the Council

1. General responsibility for non-academic matters of campus life, such as parting regulations, cultural events, and social activities;
2. Legislative authority over all University-wide academic policies (including but not necessarily limited to the following: standards for admission, retention, graduation, University honors, and University awards; policies concerning class attendance, the grading system, academic petitions and special actions, examinations, student transfer, and academic probation, suspension, and dismissal; procedures concerning course equivalency and University registration; and introduction of new degree programs);
3. Legislative authority concerning standards for student discipline in academic cases;
4. Legislative authority for the academic calendar to the extent that it does not alter the terms and conditions of faculty employment;
5. General authority to study and to make recommendations within the University community on matters it deems appropriate, including long-range planning, the annual budget, the allocation of available resources, and other matters of compelling significance;
6. General authority, subject to the approval of the President and the Board of Trustees, to make recommendations to local, state, and federal governing bodies;
7. General authority to establish such committees as appropriate to carrying out its powers and functions; and
8. General authority to draw up rules and regulations for its own operation.

Council Membership

1. Twenty-one (21) faculty members: one (1) elected from each college, thirteen (13) elected at large, and the Chairperson of the Faculty;
2. Ten (10) students: eight (8) undergraduates and two (2) graduates to include the President of the Interdormitory Council, the President of the Graduate School Association, and the President of the Student Government;
3. Six (6) administrators: the Vice-President for Academic Affairs, the Vice-President for Student Affairs, the Vice-President for Business Affairs, two administrators elected at large by administrators of the University, and one college dean elected by the college deans of the University;
4. Three (3) members at large to be appointed by the President;
5. Two (2) members of the alumni living in the Greater Lowell community and not employees of the University of Lowell appointed by the Alumni Association;
6. The immediate past Chairperson of the University Council as ex officio, non-voting member.





ADMISSION POLICIES

Undergraduate degree programs at both the associate and baccalaureate degree levels are offered by the Evening School of Continuing Education. These programs are offered for part-time students only and are not described in this publication.* Baccalaureate degree programs are offered by the Colleges of Education, Engineering, Health Professions, Liberal Arts, Management Science, Music, and Pure & Applied Sciences.

Entering freshmen who prefer to test their abilities and interests or who wish to explore several areas of study before identifying themselves with one of the baccalaureate day programs can request admission as undeclared students. Students transferring with 60 or more credits may not request status as undeclared students and must enter the University with a commitment to an academic major or professional program.

Individuals who are interested in the health professions but have made no decision concerning a specific major should apply to the College of Health Professions.# Students who are interested in areas of the humanities or the behavioral and social sciences, or who have yet to define an area of interest, should apply to the College of Liberal Arts. Students who have a general interest in business professions should apply as undeclared students in the College of Management Science. Individuals who are undecided concerning choices of degree programs and are interested in technological areas, the sciences, and mathematics should apply to the College of Pure & Applied Sciences. Students who wish to pursue elementary or secondary education programs select appropriate academic majors in the College of Liberal Arts (American Studies, Art, English, French, History, Political Science, Psychology, Sociology, or Spanish) and apply for transfer at the beginning of their junior year to the College of Education. Since secondary education programs of the College of Education are currently under review, students entering the University in September, 1978, and subsequent semesters are advised that no commitment can be made to honor their interests in these programs. Students who desire to pursue careers in health education and music education apply respectively to the College of Health Professions and the College of Music.

*See *Bulletin of Continuing Education & Evening School* for information concerning admission policies, curricula, and academic policies of continuing-education programs.

Undeclared students in the College of Health Professions are advised that enrollments in medical technology, nursing, and physical therapy programs are always limited and that openings may be inadequate to accommodate all qualified applicants at the time when program declarations must be made following their completion of 60 credits. However, qualified undeclared students can be accommodated in health education and health service administration programs.

Programs of the College of Education+

Elementary Education

Secondary Education

+ Qualified applicants accepted for junior year

Programs of the College of Engineering

Chemical Engineering+

Mechanical Engineering

Civil Engineering

Nuclear Engineering

Electrical Engineering

Plastics Engineering

Industrial Technology*

+ Paper option available in senior year

*Options available in Manufacturing and in Water and Wastewater Technology

Programs of the College of Health Professions

Health Education

Nursing

Health Services Administration

Physical Therapy

Medical Technology

Programs of the College of Liberal Arts

Administration of Law & Justice

Modern Languages

American Studies

Philosophy

Art

Political Science

English

Psychology

French

Sociology

History

Spanish

Programs of the College of Management Science

Business Administration+

Industrial Management

Economics

+ Options available in Accounting, Economics, and Management

Programs of the College of Music

Music

Music Theory

Music Education

Performance

Musicology

Programs of the College of Pure and Applied Sciences

Biological Sciences

Meteorology

Chemistry

Physics#

Environmental Sciences+

Radiological Health Physics

Mathematics*

+ Geology option available

*Options available in Applied or Pure Mathematics, Computer Science, and Mathematical Statistics

#Options available in Optics & Applied Physics

GENERAL ADMISSIONS POLICIES

Admission to all baccalaureate day programs is made through the Office of Admissions and according to established undergraduate policies. Admission to programs of continuing education or to Summer School does not constitute admission to baccalaureate day programs and implies no commitment, per se, for subsequent application of continuing-education or summer-school courses to baccalaureate day programs. An individual who is admitted by the Office of Admissions as a baccalaureate degree candidate must be accepted by one of the colleges of the University as an undeclared student (entering freshmen or transfers with no more than 60 semester credits only) or as a declared student with a commitment to an academic major or professional program. When

resources of a college or program limitations render it necessary to establish admission quotas, differential admission criteria above and beyond the minimum University admission requirements will be applied in the selection of applicants as matriculating students.

To be admitted for undergraduate matriculation, an individual must present an academic performance record which indicates a reasonable probability of success in his or her chosen day program or college. In the case of freshman admission to undergraduate degree candidacy, performance is measured through the high school record and standardized test results. In the case of advanced standing students, performance is measured either by success as a matriculated student at some other accredited institution of higher education or by success at the University of Lowell as an associate or baccalaureate degree candidate in the Evening School of Continuing Education or as a non-matriculated student in the Second Chance Program for Adults or the Educational Opportunities Program. Within the space available in particular day programs, admissions are offered first to those whose performance record indicates the highest probability of success in the chosen program or college.

Individuals who are admitted by the Office of Admissions as non-matriculating students are admitted on a semester-by-semester basis and solely for courses which are designated at the time of admission. Such admission is granted only within provisions which govern special plans of non-degree studies as are described under the heading "Application Procedures for Non-Matriculating Students."

Depending upon enrollment restrictions, application deadlines vary for engineering, management science, medical technology, nursing, and physical therapy programs. Individuals who apply after the closing dates which are specified for these programs may be offered waiting list status. An applicant who has been approved for admission to restricted programs will be advised in his or her letter of the specific deadline for accepting an offer of admission and for making a required tuition deposit of \$50.00. For all other baccalaureate programs, the University operates on a rolling admission plan. An applicant who has been approved for admission to any program other than those which are specified above as having enrollment restrictions is required to notify the Office of Admissions of his or her acceptance of an offer of admission within thirty days of the date of the official acceptance letter and to make a required tuition deposit of \$50.00. A refund of the \$50.00 tuition deposit will be made to individuals who notify the Office of Admissions by June 1st that they wish to cancel their University admission. A refund of the tuition deposit will not be made after June 1st.

It is the policy of the University of Lowell that students seeking admission will be evaluated on their merits and (as prescribed in applicable federal and state laws) without respect to their race, color, creed, national origin, age, sex, handicap, or marital status. The University makes a special attempt to attract students from various racial backgrounds in disadvantaged environments.

APPLICATION PROCEDURES AND REQUIREMENTS FOR MATRICULATING STUDENTS

Application Procedures and Requirements for Graduating High-School Seniors and High-School Graduates

Graduating high-school seniors and high-school graduates who wish to be admitted to the University as matriculating students should (1) complete prior to April 1 the application form of the University of Lowell, (2) request high-school principals or guidance directors to forward to the Office of Admissions transcripts of secondary school grades — including grade reports for at least the first quarter of the senior year, (3) complete the College Board Student Descriptive Questionnaire, and (4) arrange to take the College Entrance Examination Board Scholastic Aptitude Tests. Detailed information concerning the College Entrance Examination Board tests and the dates throughout the year on which they will be given may be secured from the Office of Admissions of the University of Lowell, high-school principals or guidance directors, or the Educational Testing Service (Princeton, New Jersey). Special information is provided in the following sections concerning required aptitude examinations for applicants to music programs and satisfaction of departmental language requirements through the Foreign Language Achievement Tests of the College Entrance Examination Board. Following receipt of application forms, transcripts of high-school records, and scores of the Scholastic Aptitude Tests, the Office of Admissions may arrange appointments for personal interviews of applicants.

The responsibility for having all credentials forwarded to the University of Lowell rests solely with the applicant. Correspondence from students who may need assistance in adapting their high-school programs to satisfy specific requirements of the University is welcomed. Such correspondence should be addressed to the Office of Admissions, University of Lowell, Lowell, Massachusetts 01854. Requests for application forms should be directed to the same office.

Secondary School Preparation

The University desires applicants to present course work which has been undertaken within college preparatory curricula, specifies a minimum high school grade-point average of 2.50 (on a 4.00 scale) for the admission of degree candidates, and, all things being equal, places primary emphasis upon the high school record in identifying candidates for admission. An individual whose high school average is below the required minimum may be considered for admission, however, if he or she presents verbal and mathematics scores on the Scholastic Aptitude Tests of the College Entrance Examination Board which are higher than those which are specified for the admission of degree candidates by the college or program to which the individual has applied. There are no specific formulas for weighting or balancing high school averages and SAT scores, but the lower the high school average the higher the SAT scores should be.

The following is a suggested pattern of high school courses for students who wish to apply to programs other than those which specify a particular set of course requirements.

English	4 units
College Mathematics	2 units
American History and Social Studies	2 units
Laboratory Science	1 unit
Electives	7 units

Applicants for admission to the College of Liberal Arts who wish to major in English or history are advised to present two units of course work in a single classical or modern foreign language. Individuals wishing to major in French or Spanish in the College of Liberal Arts are advised to present four units of high school courses in their intended language. Applicants for the program in modern languages should present two units each in two modern foreign languages or two units in one modern foreign language and two units in Greek or Latin.

Students who wish to major in the health professions (health education, health services administration, medical technology, nursing, or physical therapy) are required to present biology and chemistry as part of their secondary school course work and must present a minimum high school grade-point average of 2.50. A course in physics is also recommended.

For admission to courses of study in pure and applied sciences, engineering, and industrial management, applicants must have completed the following units of secondary school study:

Algebra (quadratics and beyond)	2 units
Plane Geometry	1 unit
Trigonometry	1/2 unit
English	4 units
American History	1 unit
Chemistry (including laboratory)	1 unit
or	
Physics (including laboratory)	1 unit

Preference is given to applicants offering both chemistry and physics. Those individuals who do not offer both subjects are urged to pursue the appropriate course work in summer school. Applicants to programs in pure and applied sciences, engineering, and industrial management may offer credits in areas other than those which have been specified above in languages, history, mechanical drawing, social studies, and other sciences.

Required Admissions Examinations

Applicants for admission to the University as matriculating students are required to take the Scholastic Aptitude Tests of the College Entrance Examination Board during the period from April of the junior year to March of the senior year. Although an individual who fails to achieve the desired SAT verbal and mathematics scores may be admitted to many programs if he or she evidences high academic motivation and possesses a high-school record which is better than the specified University minimum, the general expectation of the Univer-

sity is that an entering freshman shall have achieved the minimum SAT scores which have been specified for the college or program to which he or she has applied.

College	Programs	SAT-verbal	SAT-mathematics
Liberal Arts	All	400	400
Pure & Applied Sciences	All	400	500
Education*	NA	NA	NA
Engineering	Engineering	400	500
	Technology	400	400
Health Professions+	All	450	450
Management Science	All	450	450
Music	All	400	400

*Admission to programs of the College of Education is not open to freshmen.

+Specified requirements may not be waived.

Achievement Tests of the College Entrance Examination Board are not required for admission, but the University may advise accepted students to take these tests and those of the College Level Examination Program or of University departments for purposes of placement or advanced standing with credit. Students who wish to apply for music programs are required to achieve satisfactory scores on written tests of musical aptitude and basic music theory which are developed and administered by the College of Music. Such students are also required to demonstrate their vocal or instrumental ability during a jury examination before a committee of music instructors. Music aptitude and performance tests are given by the College of Music on four different occasions during the academic year. Applicants will not be invited to take the special music tests at the University until all their credentials have been approved by the Office of Admissions.

Change of Program Declaration

Individuals who have been admitted to specific programs or to a college as undeclared students and who wish to change their designations of program or college admission may do so by notifying the Office of Admissions. Such changes of designation must reach the Office of Admission no later than one month prior to the date established for freshman registration and will be approved only if space in the desired program or college permits and the applicant has satisfied all admission requirements for the newly designated college or program. Changes in program designation after this deadline must be made after registration by filing requests for change of major and/or intercollegiate transfer within the University.

Application Procedures for International Students

Applicants who are residents of foreign countries are required to comply with those procedures specified above for graduating high-school seniors and are urged to have transcripts of their secondary school and/or college records, as well as all other application materials, submitted in *English* no later than twelve months in advance of their expected date of admission. All international students should have considerable facility in speaking and writing English and should have financial resources sufficient for their years of study at the

University. Students whose native language is not English are required to take the Test of English as a Foreign Language (TOEFL). Students are responsible for making arrangements for taking this test and should address inquiries to: TOEFL, Educational Testing Service, Princeton, New Jersey 08540, U.S.A. The completed application form should be returned to the Testing Service at Princeton well in advance of the application deadline. The test fee, which should be remitted with the application, entitles the student to have his test score sent to three different institutions. Registration for the Test of English as a Foreign Language does not constitute application for admission to the University of Lowell. *The Bulletin of Information*, obtainable without charge, contains a description of the test as well as rules regarding application, fees, reports, and the conduct of the test; lists of examination centers, examination dates; and an application blank. On the application for the test, the student should specify that his score be sent to the Office of Admissions, University of Lowell, Lowell, Massachusetts 01854. In addition to the TOEFL, an admitted student may be required to report to the Admissions Office to make arrangements for taking an English placement test for foreign students prior to registration. Results of this test may determine the courses for which the student will be permitted to register in his or her program of study.

Application Procedures and Requirements for Non-Graduates of High Schools

Applicants who have not graduated from high school may be admitted to the University upon satisfactory completion of the General Educational Development tests and receipt of a certificate of high-school equivalency. Such students are required to take the Scholastic Aptitude Tests of the College Entrance Examination Board prior to their application and to present scores which are acceptable to the University. Admissions procedures for students possessing certificates of high-school equivalency are the same as those which are prescribed for graduating seniors and high-school graduates.

Application Procedures and Requirements for Transfer Students

In general, the University of Lowell will accept on an hour-for-hour basis semester credits as shown on official transcripts of record which are received directly from other accredited collegiate institutions and which are applied to an initial baccalaureate degree. Quarter credits are recognized on a prorated basis of 3 quarter credits to 2 semester credits. Students who are interested in transferring credits for an additional baccalaureate degree should consult the appropriate section below concerning admission for an additional baccalaureate degree. Preference for admission to the University is based upon the record of each individual transfer applicant as of the end of the semester preceding admission. All credits to be transferred must be identified at the time of application for transfer, and under no circumstances will the University consider course work undertaken by the student prior to admission which is identified after transfer. All transfer applicants must have completed an as-

sociate degree program or must be eligible to return to their last previously attended institution for the semester in which they seek admission to the University. A student who has been dismissed for academic or disciplinary reasons will not be considered for admission.

Required Credentials

It is the responsibility of students seeking transfer to the University for arranging with the institution in which their previous work was completed to forward to the Office of Admissions no later than May 1 for fall semester admissions or November 15 for spring semester admissions official transcripts of their completed courses and notations of all courses in progress. Additionally, final transcripts of all completed courses must be forwarded to the Office of Admissions following the completion of previously designated courses in progress. Unless applicants have made special arrangements with the registrars of their previous institutions to telephone grades for previously designated courses in progress to the Office of Admissions, their application files will be designated as incomplete when they do not contain an official and final transcript. *Transfer students whose records are incomplete on the first day of semester classes may be prohibited from attending courses and may be required to withdraw from the University.* An applicant who has attended one or more institutions must request each registrar to mail directly to the Office of Admissions a transcript of his or her record even though credits were not earned or credits are not presented for transfer. An applicant who has fewer than 30 semester credits of acceptable courses ("C" or better) must request that his or her high school record and College Entrance Examination Board test scores be sent to the Office of Admissions.

Evaluation of Credentials

Course credits for transferred work are evaluated by the Office of Admissions at the time of student transfer and in accordance with general policies of the University. Since the nature of professional and specialized programs precludes the application of non-equivalent transfer courses to specific curriculum requirements, the records of transfer students are also evaluated by major departments at the time a student is accepted for matriculation by one of the colleges of the University. In all cases, transferred credit accepted by the University does not guarantee admission to professional programs for which specific admission standards and quotas have been established. The Office of Admissions will advise applicants when their admission does not guarantee acceptance into their preferred professional programs. The applicability of grades received in transferred courses for the determination of the grade-point average of the student's major at the University of Lowell is determined by policies of each of the colleges.

University Restrictions

Courses completed at non-public institutions which are not accredited by the major regional accrediting associations may not be credited to degree programs

of the University. Nor may courses be credited to baccalaureate programs of the University which were completed through extension or adult-enrichment programs (e.g., correspondence or home study) or post-secondary school diploma programs, which have been taken more than ten years prior to the date when a student applies for transfer, or which are unacceptable to the transfer institution for its associate or baccalaureate programs. However, such competencies as may have been achieved by a student through courses which are unacceptable for transfer may be recognized by the University through procedures for advanced placement with course credit and through department examinations.

College and Program Restrictions

Curriculum and instructional methods courses and apprentice-teaching courses are not accepted for transfer by the College of Education and are not applicable to academic programs of the College of Liberal Arts or the College of Pure & Applied Sciences. Special regulations of the College of Health Professions pertain to professional courses of this college and should be consulted by applicants wishing to transfer into health education, health services administration, medical technology, nursing, or physical therapy. Students transferring to the College of Pure & Applied Sciences may expect recognition of previously completed course work in the sciences and mathematics if these courses are equivalent to those specified by the science and mathematics curricula of the College. Prerequisites for courses of the major field requirements or courses which are prerequisites for admission to the College may not be credited to the minimum requirements for a baccalaureate degree in mathematics or the sciences.

The Massachusetts Transfer Compact

The University of Lowell has affirmed its intention to maintain flexibility in the transfer of qualified students of the Commonwealth of Massachusetts. For the implementation of this objective, the University of Lowell has subscribed to the Massachusetts Transfer Compact and applies to students who apply for admission under this compact the same policies which are applied to University of Lowell students who petition for intercollegiate transfer within the University.

All courses which have been accepted by the University from signatory community colleges of the Massachusetts Transfer Compact are listed on the student's permanent record card, and those courses which are not applicable to specific curriculum requirements are credited, whenever possible, as unrestricted elective courses. Since some curricula of the University do not provide for such unrestricted elective courses, or the number of transferred courses may exceed the number of unrestricted elective courses which are permitted within the specifications for minimum degree requirements, transferred courses which are not applicable to the specific requirements of a curriculum are not counted in the determination of the number of course hours completed until the semester of graduation. (Cf. regulations under the sub-heading "Academic Standing" which appears in the following chapter entitled "Undergraduate Academic Policies," for an explanation of course hours completed.) This procedure prevents the early

imposition of a grade-point requirement for retention which is in excess of that specified for the number of credits completed and applicable to the student's particular curriculum.

Compact Specifications

Signatory institutions of higher education in the Commonwealth of Massachusetts will honor this policy and adhere to the following:

1. Definition of an associate degree transferable as a unit (contingent upon acceptance for admission) toward a baccalaureate degree as the equivalent of 60 hours of undergraduate college level study, including:
 - a. 6 hours of English/communication
 - b. 9 hours of behavioral/social sciences
 - c. 9 hours of humanities/fine arts
 - d. 9 hours of mathematics/sciences
 - e. the remaining credit to be on the college level
2. The awarding, upon acceptance, of the full number of credits earned while enrolled in the associate degree program.
3. Continuous review and evaluation of the implementation of this policy and referral to the Massachusetts Transfer Review Council of problems related to student mobility.

Clarifications

1. Students changing programs (e.g., liberal arts to engineering) may expect that it will require more than four semesters to complete the sequence of a new major.
2. "D" credit will be accepted toward the baccalaureate degree, but a receiving institution is required to apply "D" credit toward a major only if it does so for "native" students, that is, students who enrolled in the four-year institution as freshmen.
3. This unit transfer policy will accomplish the twin objectives of (1) providing unlimited opportunities for instructional and curricular flexibility in the two-year college sector, and (2) assigning to each two-year college full responsibility for meeting standards of equivalence for all programs submitted as transferable.
4. Course credit for transfers from programs not conforming to Compact specifications will be evaluated by the receiving institution according to the applicability of those courses to the baccalaureate program in the major field of the student.

Additional Baccalaureate Degree

A student who has earned a baccalaureate degree at the University of Lowell or at another accredited baccalaureate institution may be admitted to the University to pursue an additional baccalaureate degree which is different from the previously conferred degree if (1) the major field of the previous degree is clearly distinct from that of the additional degree, (2) the work for the additional degree consists of not less than two semesters of residence, (3) the final 30 credits presented for the additional degree are in addition to and independent of any previous baccalaureate, and (4) a minimum of 15 credits is taken at the University in the major field which is presented for the additional degree. If any of the first three years of credit has been transferred from another institution, the candidate for the additional baccalaureate degree must spend the last year earning a minimum of 30 credits of uninterrupted residence at the University.

Candidates for the additional baccalaureate must fulfill all curriculum requirements for the additional degree (including courses presented from previous programs and courses completed in fulfillment of the final 30 credit requirement) and must comply with any special college regulation concerning comple-

tion at the University of major field requirements. Students who are candidates for an additional baccalaureate may be eligible for major field honors but are not eligible for University honors unless they have completed 60 credits at the University following their admission as candidates for the additional baccalaureate degree.

Application for admission to the University as a candidate for an additional baccalaureate degree is made through the Office of Admissions. Prior to admission to the University as candidates for additional baccalaureate degrees, applicants must be approved by the college in which they plan to matriculate and the department in which they intend to major. Retention standards for candidates for additional baccalaureate degrees are based upon the grade-point averages for achieving satisfactory standing which are specified for the several levels of course hours completed. Grade-point averages are computed solely on the basis of qualitatively graded courses which have been completed at the University for the additional baccalaureate degree. The number of course hours completed include all course credits which have been applied from previous baccalaureate programs. (Cf. "Academic Standing," pp. 125-126.)

APPLICATION PROCEDURES FOR NON-MATRICULATING STUDENTS

Admission as a non-matriculating student is granted only within provisions which govern the non-degree programs cited below. Applicants for admission as non-matriculating students are required to file admission applications and to submit such credentials as are specified for their proposed non-degree programs. Readmission as a non-matriculated student may be granted when the following conditions are satisfied: (1) the student has satisfactorily completed his or her previously attempted courses, (2) the original condition under which he or she initiated non-matriculating studies permits continued enrollment, and (3) commitments of the University to matriculating students permit enrollment of non-matriculating students. Preference for admission as a non-matriculating student is granted by the Office of Admissions to individuals who qualify for the Educational Opportunities Program and the Second Chance Program for Adults.

Programs for Talented High-School Seniors

Under certain specified conditions, talented high-school seniors are permitted to enroll in the University as non-matriculating students. To qualify for such studies, high school seniors must be recommended by their principals as students who are sufficiently mature to complete their proposed courses of study. Each case of a non-matriculating high school senior is considered individually on its own merits, and the Office of Admissions and the departments offering the courses desired by the student must concur with the high school principal's recommendation. Application for admission under the provisions of policies for non-matriculating high school seniors should be submitted to the Office of Admissions according to the schedule established specifically for this

purpose. Grades and course credits will be recorded on the permanent record card of the student for all attempted course work in accordance with the grading system of the University and will appear on any official transcript issued to or for the student. In the event that non-matriculated high school seniors subsequently are granted matriculation status, their completed courses ("D" or better) will be credited to degree programs in accordance with regulations of the college to which they are admitted.

The Second Chance Program for Adults

The Second Chance Program is a part-time plan of studies (three to eleven credits per semester) which is available to adults of both sexes with or without previous collegiate experience. Hence the program can provide an avenue to begin a program of higher education as well as to resume or to change a previously initiated program. The Program specifically has been instituted to meet the needs of three types of adults: (1) individuals whose desire to begin or to continue a higher education has been frustrated or interrupted by family or employment commitments, (2) individuals who may feel they are "too old" or "too out of practice" to compete full-time in the classroom with recent high school graduates, and (3) individuals whose current employment makes impossible their attendance of evening programs of continuing education.*

The only formal credential which is required for initial admission to the Second Chance Program is a high school diploma or certificate of high school equivalency. The program does not require the attainment of a specific high school average and does not specify the completion of any particular sequence of high school subjects. Nor does it require applicants to have completed Scholastic Aptitude Tests of the College Entrance Examination Board. The Second Chance Program is open to all adults on a space available basis, and through open admissions to a provisional program of 15 or 30 semester credits it provides an alternative to the competitive admissions process for achieving matriculation status.

Students who have completed 15 or more semester credits at an accredited college within the previous ten years are admitted to pursue a program of provisional studies of 15 semester credits. Students who have completed less than 15 credits at an accredited college within the previous ten years, or who have never attended an institution of higher education, are admitted to pursue a program of provisional studies of 30 semester credits. Second Chance students who satisfactorily complete their provisional programs are recommended by the program coordinator to the Office of Admissions for matriculation status and for general admission to colleges of the University as undeclared students or for

*Admission to the Second Chance Program is not open to students of the University of Lowell with regular status, including students who have been granted reduced loads. Nor is the Second Chance Program available as an alternative admissions option for individuals who were previously enrolled in the University of Lowell as matriculating day students unless they have been absent from the University for two or more years prior to the date of their requested readmission and have withdrawn from the University while in satisfactory academic standing.

specific admission to University programs as declared students. Students who achieve matriculation status and are admitted to a college are not required to decide upon a specific degree program until they have achieved sophomore standing (60 credits). However, an immediate declaration of major will greatly facilitate selection of appropriate prerequisite courses for major fields and accordingly will reduce the possibilities of making time-consuming errors in judgment.

Second Chance students who have satisfactorily completed their provisional programs and who wish to continue their studies on a part-time basis are permitted to petition for admission to all programs of the University except nursing. Students who wish to continue their studies on a full-time basis following completion of their provisional programs may do so and become regular, full-time University students. Such students also are permitted to petition for admission to the nursing program. Individuals should understand, however, that some programs have established admission requirements which mandate the completion of specific prerequisite courses and/or the achievement of higher grade-point averages than are specified by University retention standards for the achievement of matriculation status by Second Chance students. The program coordinator will advise an individual of these requirements when he or she has determined a choice of future curriculum and will assist in the development of a provisional program which will be appropriate for such a curriculum.

Application Procedures

Individuals who are interested in the Second Chance Program should have an informal discussion with the program coordinator, Miss Joyce Denning, Coburn Hall, Room 101, extension 479, prior to filing applications with the Office of Admissions. If the Second Chance Program appears to suit an individual's needs, he or she should complete an application form in the office of Miss Denning, who will describe what is entailed by the several application requirements. Individuals who are interested in fall semester admission should arrange for an interview and must complete all application procedures on or before March 1st. Individuals who are interested in spring semester admission should arrange for an interview and must complete all application procedures on or before October 1st.

Admission to the University as a provisional, non-matriculating student in the Second Chance Program requires the completion of the following steps by the deadlines which are cited above: (1) complete the application form of the University of Lowell, (2) make payment of the application fee, (3) request high school principals to forward to the Office of Admissions transcripts of secondary school grades or, for a student with high-school equivalency, request the Department of Education to forward to the Office of Admissions certification of high school equivalency, and (4) request registrars of all institutions of higher education attended to forward transcripts of previous course work to the Office of Admissions, whether such course work is presented for recognition or not. The

responsibility for having all credentials forwarded to the Office of Admissions rests solely with the applicant.

The Office of Admissions forwards a complete copy of each applicant's admission folder to the program coordinator. The records of fall semester applicants are forwarded when complete but in no case later than April 1st. The records of spring semester applicants are similarly forwarded no later than November 1st. Accordingly, an individual who files an application for admission on the established deadlines should realize that all necessary documents must reach the Office of Admission within one month of his or her date of application.

Following receipt of all admission materials, the program director will determine whether the student should be admitted for a 15 or 30 credit provisional period and may require an interview with students who have not previously discussed their plans or whose previous college course work justifies further discussion. Following notification from the program coordinator, the Office of Admissions will forward a written letter of admission to each student who can be accommodated within the spaces which are available for Second Chance students. Individuals who are accepted for admission must make a non-refundable tuition deposit of \$50.00. Receipt of this deposit is required by April 15th or November 15th for individuals who wish to register during the designated fall or spring preregistration periods. In any event, the tuition deposit must be received by the Office of Admissions within 30 days of the date on which the admissions letter was issued or the accepted applicant will be removed from the admissions list. Prior to registration during the preregistration or late registration period, an accepted applicant must file the standard University health questionnaire, and, to qualify for in-state tuition rates, a notarized certificate of Massachusetts residency. Individuals who are denied admission may be advised to reapply on a specific date or asked if they wish to be placed on an admissions waiting list.

Provisional Programs of Study

Provisional programs of study for individuals who have been admitted to the Second Chance Program with non-matriculation status are developed by the student in consultation with the program coordinator during periods for registration and preregistration. Appointments with the coordinator are scheduled well in advance for this purpose.

Qualification for Matriculation

Following satisfactory completion of their provisional programs, individuals may apply through the Office of Admissions for admission as matriculating students in one of the colleges of the University. Such application must be made on the appropriate form and must be accompanied by certification from the program coordinator that requirements for University matriculation have been satisfied. In filing the designated application form, students are required to designate their type of University status (continued enrollment in the Second Chance program with part-time status or enrollment as a regular student with full-time status) and their type of college admission (acceptance as undeclared students in a college or acceptance as declared students in a particular major or program).

Applicants also are advised to designate a choice of alternative major or program when they have requested admission to programs which are regularly over-subscribed and/or for which waiting lists of applicants have been established.

Applications for matriculation are forwarded by the Office of Admissions (together with transfer evaluation forms completed by the program coordinator and transcripts of all transfer and University courses) to the appropriate college dean and, subsequently, to the appropriate department chairperson if a designation of major has been made by the applicant. An individual is notified of his or her acceptance by the Office of Admissions, which will issue the student a formal letter of admission to a college and/or program to which he or she has applied. No additional charge is levied for an application for matriculation. A student who is accepted for matriculation by one of the colleges of the University is assigned an advisor in the college of his or her admission and is no longer under the jurisdiction of the coordinator of the Second Chance Program.

Continued Matriculation in the Second Chance Program

Students who have been accepted for matriculation and who continue with part-time status in the Second Chance Program are required to present a minimum of 30 semester credits in University day classes and 15 credits of University courses in their majors. Upon the approval of the appropriate college dean, up to 15 credits of the minimum University residency requirement of 30 credits may be satisfied through completion of day courses in the University of Lowell Summer School. (Cf. "Academic Policies: Residency Requirements.")

Tuition and Fees

Individuals who are enrolled part time as matriculated or non-matriculated students in the Second Chance Program are levied tuition fees in accordance with rates for part-time students and are required to pay all University fees when applicable to their programs except for the student activity and student union fees. Full time matriculated students pay all fees as specified for full time students.

Programs for Students Matriculated at Other Colleges and Universities (Visiting Students)

Students who are matriculants for degrees at associate or baccalaureate institutions may be admitted to the University to pursue specifically authorized courses. Such students are admitted to the University on a semester-by-semester basis and must secure prior approval for University courses from appropriate authorities at institutions where their degrees will be granted. Permission to enroll in courses of the University will not be granted to students without a letter from an appropriate officer of the institution in which they are matriculating which certifies that they are candidates for a degree and are in good academic standing. Courses of a professional nature may not be elected by non-matriculating students of the University unless specifically authorized by the appropriate college dean.

Programs for Students Matriculating in the Evening School of the University

Students who are matriculating for associate or baccalaureate degrees in the Evening School of Continuing Education may be permitted to pursue specifically authorized day courses. Such students must secure the written approval of their program coordinators for all projected courses prior to filing an application with the Office of Admissions. Full notation of all approved courses (including those which have been failed) is made upon the permanent record card of continuing-education students.

Programs for University Employees

University employees who are high school graduates or who possess certificates of high school equivalency may apply for admission as non-matriculating students. Admission is extended to employees as non-matriculating students on a semester-by-semester basis and solely for courses designated at the time of application. Employees who wish to matriculate for a baccalaureate degree should apply for admission to the Second Chance Program for Adults. Participation in this program is subject to employee obligations and special policies of the Board of Trustees.

Programs for Students Holding Baccalaureate Degrees

An individual who holds a baccalaureate degree and who wishes to pursue a limited non-degree program (up to a maximum of 15 credits) may be admitted full or part-time to the University as a non-matriculating student. Such admission requires the approval of each of the departments in which courses are contemplated.* University of Lowell graduates should indicate their dates of graduation on their application forms. Other applicants must request the registrars of the institutions in which their degrees were conferred to mail transcripts of their baccalaureate records directly to the Office of Admissions and are warned that permission to enroll in courses will be denied if transcripts have not been received prior to course registration. A student who holds a baccalaureate degree and who wishes to pursue a second baccalaureate degree must apply for admission as a matriculating student. A holder of a baccalaureate degree who does not wish to pursue a second baccalaureate should investigate the appropriateness of both degree and non-degree programs of the Graduate School before applying as a non-matriculating student.

Educational Opportunities Program

The Educational Opportunities Program, which is offered through the Office of Alternatives for Individual Development (AID) is a structured plan of non-matriculated studies for disadvantaged students from various racial backgrounds (including, but not limited to, minorities) and affords an alternative

*Courses of the College of Education are not open for election by non-matriculating students.

method for admission to such students who do not satisfy the regular admission requirements for degree studies because of inappropriate high school preparation for the college and curriculum of their choice, low achievement in high school, or low scores in Scholastic Aptitude Tests. Students who are admitted to the University in this program are granted provisional non-matriculated status on a semester-by-semester basis and may remain enrolled in this program for a maximum period of four full-time semesters and two summer sessions. Continuous enrollment in the Educational Opportunities Program is permitted only for students who are recommended each semester for continuation by the Director of AID. To qualify for continuation, individuals must have evidenced sufficient academic promise to warrant predictions of continued success.

Potential participants in the Educational Opportunities Program are identified from the pool of University applicants by the staff of the Office of Admissions, who forward the names of such individuals to the Director of AID. After reviewing the credentials of recommended applicants, the Director of AID will arrange a personal interview with each individual who expresses an interest in the Educational Opportunities Program. Through personal interviews, school records, and recommendations from teachers, counsellors, and other individuals who are personally acquainted with applicants, the Director seeks information concerning the nature and scope of each individual's interests and selects for admission those individuals whose potential and motivation for higher education indicate an acceptable probability of academic success.

Participants in the Educational Opportunities Program may be eligible for financial assistance through federal loans and grants (which may be arranged for a maximum of five years of combined enrollment in both the Educational Opportunities Program and a baccalaureate course of study), state programs, and University tuition remission. Although participating students in the Educational Opportunities Program have full access to dormitory housing, food services, and University activities, they may not participate in *varsity* athletics, which are restricted to full-time matriculating students.

The Office of Alternatives for Individual Development assigns each participant a student preceptor and a faculty advisor to assist in the selection of a program of University courses and in the development of a plan of supplemental AID courses. The objective of supplemental AID courses is to develop those skills and habits which are fundamental to successful academic competition at the University of Lowell. Such courses are individualized and self-paced in nature and emphasize the development of study, note-taking, and test-taking skills and the mastery of the basic academic tools of reading, oral and written communication, computation, and mathematics. The comprehensive Educational Opportunities Program requires attendance for all activities.

At the end of each semester of full-time enrollment (12 or more contact hours per week of University courses and supplemental AID courses), the record of each participant is reviewed by the Director and a sub-committee of faculty members from the AID Advisory Committee for the purpose of assessing individual progress and achievement. Participants whose progress is determined to be

inadequate are dropped from the Educational Opportunities Program and are ineligible to pursue admission to colleges and degree programs of the University through this alternative admissions process.

Participants in the Educational Opportunities Program may qualify for admission as degree students at the end of any period of enrollment (including both semester and summer sessions) in which they have accumulated 15 credits of University courses with grades of "C" or better. In any event, all participants are required to have passed 30 credits of University courses by the end of their fourth semester of enrollment and to have achieved 15 credits with "C" grades or better. When applicable to the curriculum and college to which individuals apply, all University courses which have been passed with grades of "CD" or better will be recognized as matriculation credits and will be computed into subsequent grade-point averages. Supplemental AID courses will not be recognized for credit. Nor will University courses which have been passed with grades of "D" be recognized for credit, and such courses must be repeated if they are required for programs to which individuals have been admitted. Individuals who do not achieve matriculation status by the end of their fourth semester of full-time enrollment are dropped from the Educational Opportunities Program and are ineligible to pursue admission to the University through this alternative means.

Since financial assistance through federal loan and grant programs may not be extended beyond a period of five years of undergraduate study, program participants who achieve matriculation status at the end of their fourth full-time semester are advised that financial assistance cannot be guaranteed for their full periods of baccalaureate studies unless they complete their degree programs within the five-year limit for both EOP and degree studies.

Adult students from disadvantaged backgrounds who do not wish to pursue a full-time provisional program should inquire concerning their eligibility for admission to the part-time Second Chance Program for Adults.

ADVANCED PLACEMENT WITH COURSE CREDIT

Students entering the University as freshmen or as transfer students may elect to challenge courses through established procedures cited below. University departments reserve the right to refuse the granting of credit for those examinations which are presented by a student for his or her major(s). Equivalency credit is granted for laboratory components of science courses only through examinations of University departments. Accordingly, science credits which are granted through the College Level Examination Program and Advanced Placement Examinations of the College Entrance Examination Board do not waive any specified laboratory requirement.

College Level Examination Program

General Examinations

Entering freshmen may be granted university credit as specified below for general examination scores of "500" or better. It should be noted, however, that general examination credits may not be applied to a student's degree requirements when a general examination is cognate with the student's academic major(s). General examinations may not be authorized for degree credit after admission.

CLEP Examination	Credit Allowed	University Core Requirement
English Composition	6sh	English Composition
Mathematics	6sh	Mathematics and Sciences
Natural Sciences	6sh	Mathematics and Sciences
Social Sciences	6sh	Behavioral and Social Sciences
Humanities	6sh	Fine Arts and Humanities

Subject Examinations

Entering freshmen and transfer students may be granted university credit for subject examinations of the College Level Examination Program when they have achieved scores which are on or above the "C" grade level. A complete listing of subject examinations of CLEP for which the University grants credits may be found elsewhere in this publication under the heading "Academic Policies: Course Equivalency Examinations."

Advanced Placement Examinations of the College Entrance Examination Board

Entering freshmen who have demonstrated college level proficiency through Advanced Placement Examinations of the College Entrance Examination Board may be granted university credit for scores of "5," "4," and "3." Credit will not be given for scores of "2" or "1."

The following is a listing of Advanced Placement Examinations for which the University grants course credit.

AP Examination	Course Equivalent	Credit
American History	43-111, 112: (United States History)	6
Biology	83-101, 102 (Life Science)	6
Chemistry	84-121, 122 (Chemistry)	6
Classics-Vergil	56-303 (Selected Latin Authors)	3
Classics-Latin Lyric	56-303 (Selected Latin Authors)	3
English	42-101 (College Writing)	3*
European History	43-219, 220 (Europe)	6
French Language	50-246, 248 (Advanced Conversation & Composition)	6
French Literature	50-261, 262 (Literature of Ideas & Selected Writings)	6

*An additional 3 credits may be granted to students for 42-102 (College Writing and Literature) upon successful completion of the exemption examination of the Department of English.

German Literature	51-491 (German Literature)	6
Mathematics: Calculus AB	92-133, 134 (Calculus A I & II)	8
Mathematics: Calculus BC	92-133, 134 (Calculus AI & II)	8
Music	74-161 (Music of Western Civilization)	3
Physics B	95-103, 104 (General Physics)	6
Physics C — Mechanics	95-141 (Physics I)	3
Physics C — Electricity & Magnetism	95-245 (Physics III)	3
Spanish Literature	54-302, 303 (Introduction to Spanish & Latin American Literature)	6

Foreign Language Achievement Tests of the College Entrance Examination Board

University credit is granted upon the recommendation of the Department of Languages to entering freshmen who have demonstrated satisfactory language competency through the Language Achievement Tests of the College Entrance Examination Board. University credit on the intermediate course level will be given to students achieving scores of "550" or better. Such credit will satisfy any language proficiency requirement specified for students by their major departments.

Foreign Language Achievement Tests Administered by the Department of Languages

University credit is granted to entering freshmen and transfer students who have demonstrated satisfactory language competency through reading examinations in foreign languages which have been administered by the Department of Languages. College credit on the intermediate level will be given to students achieving satisfactory scores in tests of foreign languages which are offered by the University of Lowell. Such credit will satisfy any language proficiency requirement specified for students by their major departments.

Course Credit Limits Through Advanced Placement with Credit

The maximum number of credits which may be granted to any student through advanced placement procedures, including departmental equivalency examinations, is 30 semester credits. Under no circumstances will duplicating examination credit be granted to students who present formal course work for transfer. Nor will examination credit be granted to transferring students for the purposes of reducing either the major field residency requirement of 15 credits or the general residency requirement of 30 credits in University day courses.

READMISSION PROCEDURES FOR PREVIOUSLY MATRICULATED STUDENTS

Reinstatement

The University does not grant leaves of absence to students who wish to interrupt their baccalaureate studies. Accordingly, students who have with-

drawn from the University and who seek readmission must file an application for readmission with the Office of Admissions. Upper division students in medical technology, nursing, and physical therapy must make individual arrangements with appropriate chairpersons to reserve their spaces in clinical courses for the semester of their anticipated return to the University. Unless such special arrangements have been made, reinstatement by the Office of Admissions cannot ensure full resumption of a student's course of study. When resources of a college or program render it necessary to establish limitations upon enrollments, the Office of Admissions will establish a waiting list of applicants for transfer and reinstatement. Differential admissions criteria above and beyond minimum program requirements may be applied to these individuals to ensure the admission and readmission of the most qualified applicants for the limited openings.

In the event that readmission applicants wish to change their programs and/or to seek readmission to the University in a college other than that which they previously attended, their reinstatement must be approved by the chairperson of the program to which they seek admission and the appropriate college dean. If program enrollments permit, approval for such readmission will be granted to students who satisfy all program admission requirements. Individuals who seek readmission to the University in a college other than that which they previously attended will be subject to reevaluation procedures which are specified for enrolled students who seek an intercollegiate transfer. (Cf. policies governing intercollegiate transfer which appear elsewhere in this publication under the heading "Academic Policies: Change of Major with Intercollegiate Transfer.") Individuals who apply for intercollegiate transfer must submit their applications no later than *November 1 for spring semester reinstatement and April 1 for fall semester reinstatement.*

Unqualified Reinstatement

Individuals who prior to their withdrawal were students in satisfactory academic standing and who have not been absent from the University for more than one semester are automatically reinstated to the programs in which they were previously enrolled and are subject to curriculum requirements which are in effect for the classes to which they previously belonged.

Individuals who have been absent from the University for one or more semesters and have completed all degree requirements but have not filed for a degree are automatically readmitted to the University for this purpose. Upon the payment of admission and graduation fees, such individuals are authorized to apply for degrees through their department chairpersons and college deans.

Qualified Reinstatement

Students who have been absent from the University or its predecessor institutions for two or more continuous semesters are subject to the rules and regulations of the University which are in effect at the time of their readmission rather than at the time of their original admission. If program enrollments permit, individuals who were students in satisfactory academic standing prior

to their withdrawal ordinarily are reinstated to the programs in which they were previously enrolled. However, during an individual's absence some programs may have established higher entrance and retention requirements and he or she may be denied reinstatement for failure to satisfy these requirements. Unless an applicant for readmission qualifies for exemption from University retention requirements, he or she will be subject to the retention requirements of the University at the end of the semester following readmission. (Cf. policies below concerning exemption from University requirements for retention and graduation.)

Individuals are not automatically reinstated to the programs in which they were previously enrolled when they have been absent from the University or its predecessor institutions for periods exceeding ten years. Course work which has been completed prior to ten years of the date of readmission is generally recognized only through those examination procedures described in the policy statements for course equivalency. Such course work may also be evaluated on an individual basis by the Academic Standards Committee of the college in which an applicant desires to reestablish his or her matriculation. Students who wish to have such course work evaluated by the Committee must present their cases in writing to the Committee no later than *November 1 for spring semester readmission and April 1 for fall semester readmission*. Such students who wish to reestablish their matriculation on a part-time basis should consider the Second Chance Program for Adults.

Individuals who have been suspended from the University or its predecessor institutions for unsatisfactory academic standing may apply for readmission only within policies which govern probationary readmission.

Exemptions from University Retention Requirements for Reinstated LTI Students

Individuals who had been admitted to Lowell Technological Institute, who had achieved sophomore class standing or above (with 30 or more semester credits) no later than the end of the fall semester, 1975, and who had withdrawn as students in satisfactory academic standing on or before the end of this semester are exempted from University grade-point requirements as noted below upon reinstatement to curricula in which they were previously enrolled.

1. Such individuals who achieved sophomore class standing (with 30-59 credits) are exempted from University retention requirements for the first semester following their reinstatement or to the end of the spring semester, 1980 — whichever deadline is earlier.
2. Such individuals who achieved junior or senior class standing (with 60 or more credits) are exempted from University retention and graduation requirements through the end of the spring semester, 1980.

An individual who had been admitted to Lowell Technological Institute, who had achieved junior or senior class standing (with 60 or more credits) by the end of the fall semester, 1975, and who withdrew from the University subsequent to this date while in satisfactory academic standing is also exempted from University retention and graduation requirements through the end of the spring semester, 1980.

Exemptions from University retention and graduation requirements as defined above automatically expire at the end of the spring semester, 1980, and do not apply to students who seek reinstatement to programs other than those in which they were previously enrolled. All students who are exempted from the grade-point requirements of the University are subject to the following standards.

Course Hours Completed*	Grade-Point Averages for Satisfactory Standing†	Grade-Point Averages for Academic Warning†	Grade-Point Averages for Academic Suspension†
31-45	1.450	1.350-1.440	1.340 or below
46-60	1.500	1.400-1.490	1.390 or below
61-75	1.550	1.450-1.540	1.440 or below
76-90	1.600	1.500-1.590	1.490 or below
91-105	1.650	1.550-1.640	1.540 or below
106-	1.700	1.600-1.690	1.590 or below

*Included in "Course House Completed" are all course credits which have been granted (including credits awarded through transfer and challenge by examination, course credits which have been awarded with qualitative letter grades, and credits awarded with non-qualitative grades of "P" and "S") and all hours of course work which have been failed with the qualitative letter grade of "F". Courses which have been failed and which carry the non-qualitative symbols "U" and "NC" are not included in the computation of "Course Hours Completed."

†Specified "Grade-Point Averages" are computed solely on the basis of qualitatively graded courses which have been completed at the University of Lowell and its predecessor institutions and through the auspices of the University within policies governing authorized off-campus study.

Students who qualify for exemptions through the end of the spring semester, 1980, and who complete degree requirements within this deadline are subject to the cumulative grade-point requirement of 1.70 which was previously in effect for degree candidates of Lowell Technological Institute.

Probationary Readmission

A student who has been suspended from the University is entitled to apply for readmission as a full-time probationary student but may not initiate his or her probationary studies before an absence from the University of one semester. Application for such readmission to all programs except continuing-education curricula is made through the Office of Admissions in accordance with prescribed procedures and must be received by *April 1 for a readmission decision during the spring semester and by November 1 for a readmission decision during the fall semester*. Petitions which have been received by the filing deadline of November 1 will be reviewed by the appropriate academic standards committee during the fall semester, and readmitted students will be permitted to initiate their probationary studies at the beginning of the spring semester. Similarly, petitions which have been received by the filing deadline of April 1 will be reviewed by the appropriate academic standards committee during the spring semester, and readmitted students will be permitted to initiate their probationary studies at the beginning of the fall semester. *Probationary studies may be authorized during the fall and spring semesters and in day classes only.*

Upon the receipt of an application, the Office of Admissions will forward all readmission papers to the academic standards committee of the college to which

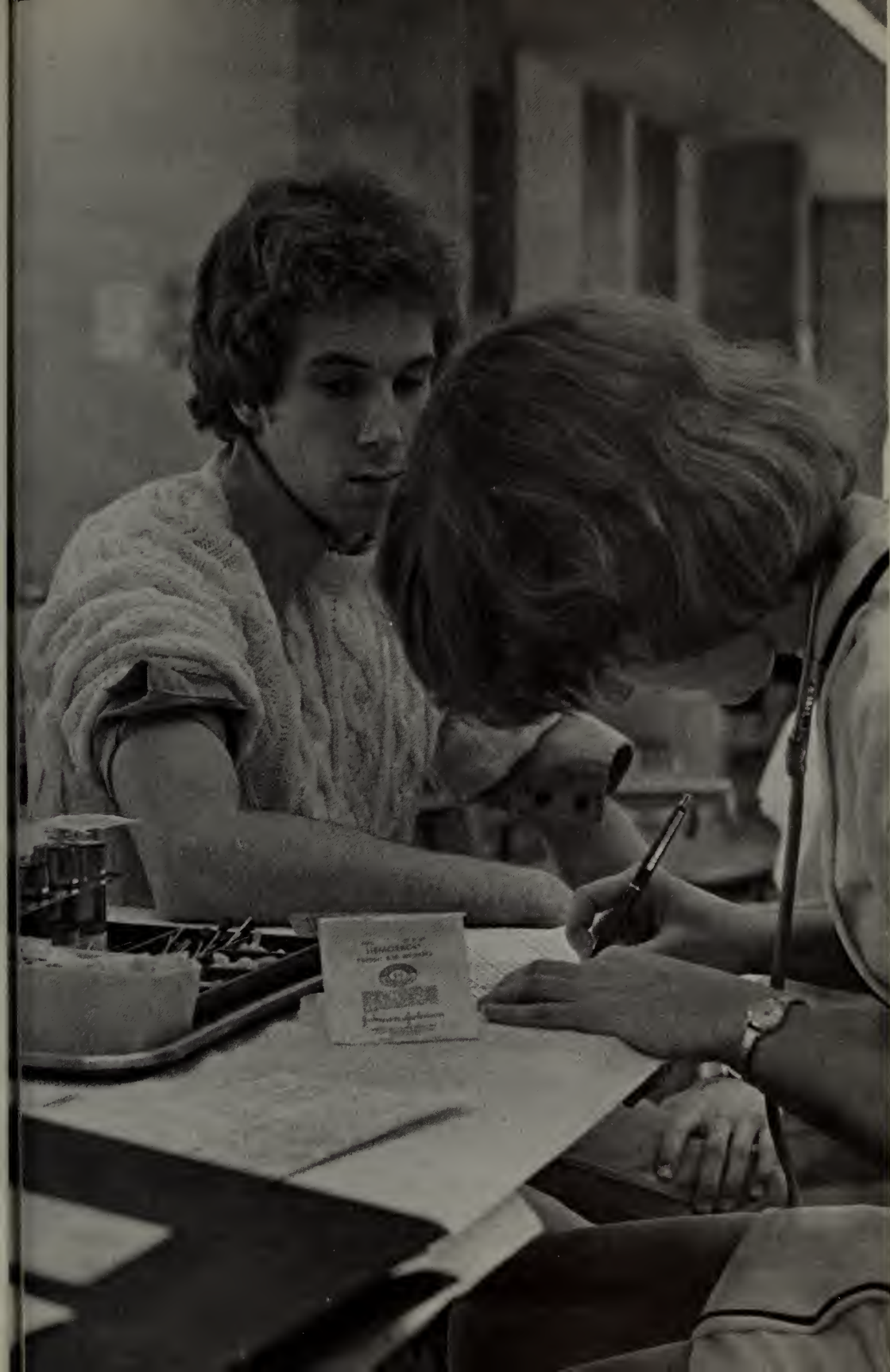
the applicant seeks readmission.* After securing recommendations from appropriate departments and studying the previous academic record of the student, the academic standards committee will lay down the requirements which the student must satisfy as a condition for his or her probation (specific courses to be taken, conference schedules with faculty advisors, and any other special or general academic condition which may be construed as necessary for the student's successful completion of his or her probationary studies). In determining such requirements for probation, the academic standards committees shall prescribe a sufficient number of courses which shall make the achievement of satisfactory academic standing reasonably possible during a full-time semester of probation. For complete information concerning probationary requirements, cf. "Undergraduate Academic Policies: Academic Standing."

*Since intercollegiate transfer is permitted only for students in satisfactory standing, students who have been suspended for inadequate scholarship may apply for readmission as probationary students only to the college in which they were previously enrolled.

PHYSICAL EXAMINATION REQUIREMENTS

Each new student is required to present evidence of satisfactory physical and mental health to the Health Service Office. Each admitted applicant for admission will receive a student health-report form which must be used to report pertinent medical data to the Health Service Office. Upon the advice of a Health Service physician, the admission, readmission, or continuing registration of a student may be denied until the student is cleared by the Health Service Office. Military personnel may have their student health report forms completed by a base physician.

All new freshmen, transfer, and readmitted students are required to present evidence of freedom from tuberculosis by means of clinical testing or chest x-ray and to file appropriate documentation of such evidence with the Health Service Office.





FINANCIAL INFORMATION

University related costs (tuition, fees, housing, board, books, and special uniform expenses) for Massachusetts citizens who reside on campus are approximately \$2,400. Similar expenses for out-of-state students are \$3,400. Additional costs for which the student should plan in estimating his or her total expenses include clothing, transportation, and entertainment. Expenditures for books and instructional supplies vary considerably, depending upon the student's major subject, but a conservative estimate for such expenditures is \$400.00. Official University charges noted below and in the following sections concerning Food Services and Student Housing were in effect at the beginning of the 1978-1979 academic year and are subject to change without prior notice by the Board of Trustees of the University of Lowell.

UNIVERSITY CHARGES

Tuition Fees

Full-time Tuition (residents of Massachusetts)	\$ 525.00
Full-time Tuition (non-residents of Massachusetts)	1,450.00
Part-time Tuition (per credit for Massachusetts residents)+	25.00
Part-time Tuition (per credit for non-residents of Massachusetts)+	50.00

University Fees

Application Fee (residents of Massachusetts)	10.00
Application Fee (non-residents of Massachusetts)	25.00
Audit Fee (per contract hour for part-time students)	10.00
Change of Course Fee (per course change transaction)	5.00
Commencement Fee	25.00
Laboratory Fee (per studio or laboratory course)	20.00
Late Fee	10.00
Student Activity Fee (full-time students only)	87.00
Student Union Fee (full-time students only)	50.00
Transcript Fee (after three transcripts)	1.00

Living Expenses*

University Housing	720.00
University Meal Plan	929.90

+Part-time tuition fees are not applicable to full-time students who have been granted "reduced load status."

*For detailed statements concerning housing and food-services charges, see appropriate sections which follow.

Student Insurance

Accident Insurance (Covered for full-time students by Activities Fee)

Optional Major Medical Insurance

Single Students	\$ 66.50
Student and Spouse	146.00
Student, Spouse, and Dependent Children	225.00

TUITION WAIVERS FOR MASSACHUSETTS SENIOR CITIZENS

Citizens of Massachusetts age 65 and over with annual incomes of \$12,000 or less are entitled to free tuition at the University on a space available basis. Applicable fees, costs of instructional materials (books, etc.), and tuition for short-term intensive workshops or seminars are not covered by this waiver. Senior citizens who are admitted as matriculating students must satisfy established admission requirements for programs or must qualify for admission to the University through the Second Chance Program for Adults.

EXPLANATION OF UNIVERSITY CHARGES

Tuition Rates

The Board of Trustees establishes tuition rates on the basis of official state residency. Eligibility for in-state tuition rates is determined by regulations governing Massachusetts residency and the New England Regional Student Program, the details of which are provided below.

Application Fee

The Laws of the Commonwealth require institutions of public higher education to collect specified application fees. These fees are not refundable and are not applicable to tuition.

Audit Fee

This fee, levied for part-time students only, is determined by the number of contact hours for which an audited course is scheduled. Fees for courses which include both lecture and laboratory hours are levied for lecture hours only since laboratory hours may not be audited.

Change of Course Fee

Students are levied this fee when they initiate a course change. The fee for a single change of program (a single add or single drop) is \$5. In the case of multiple changes, the fee is based on the number of courses dropped, e.g. two courses dropped, three added — \$10; three courses dropped, two added — \$15. If a student must drop a course because of illness or (in the opinion of the dean of the student's college) for good and sufficient reasons, the appropriate college dean

may waive the fee. No fee is levied for a change of course section or for a course change which is the result of University action.

Commencement Fee

This charge is assessed in September of the student's senior year and helps to defray the costs of graduation exercises. Students who desire to graduate "in absentia" may not be granted a waiver of this fee.

Laboratory Fee

Most science courses and some music, nursing, physical therapy, psychology, and studio courses require the payment of this special fee.

Late Fee

Students who fail to register prior to the late registration period or to make payment of their charges by the date specified on their semester bills are required to pay this fee.

Student Activity Fee

This fee, required of full-time students only, supports an extensive and varied range of athletic, cultural, and social activities for students. In addition, payment entitles each student to admission to many campus events and includes a subscription to the campus newspaper, the yearbook, and accident insurance.

Student Union Fee

Funds derived from this fee, which is levied upon full-time students only, are used to support the Student Union and to meet the operating costs of various student activities.

Transcript Fee

Students are issued three transcripts of their permanent academic record cards without charge. A fee of \$1.00 is charged for the fourth transcript and for each additional transcript thereafter.

Insurance

The University of Lowell automatically provides all full-time students with accident coverage through the student activities fee. When injury shall require treatment by a legally qualified physician or surgeon, dental treatment to sound, natural teeth, confinement within a hospital, use of ambulance or employment of a graduate or licensed nurse, the accident insurance coverage will pay the expense actually incurred by the student within 52 weeks after the date of the accident for such treatment, hospital confinement, ambulance and nurse expense up to an aggregate amount not to exceed \$1,000. Additional coverage for sickness, major medical benefits, and special coverage for mental

and nervous disorders and alcoholism is provided by the optional insurance plan. A family plan for married students is also available with options for coverage of spouses only or spouses and dependent children. Details concerning coverage provided by the student medical plan may be secured from the Office of Student Affairs, Cumnock Hall (North Campus) or the Student Health Services (Standish Street, North Campus; Mahoney Hall, South Campus).

PAYMENT OF BILLS

Students will be permitted to attend classes and use University facilities only after they have cleared their financial obligations (including the payment of library fines) or have made satisfactory arrangements for payment. All bills are payable in advance by check or money order and are due as specified on billing statements. Checks or money orders for payment of fees and tuition must be made payable to the University of Lowell. Checks for the meal fee must be made payable to the University of Lowell Cafeteria Account.

A student in debt to the University at the end of any semester or summer session for fees or other charges is not permitted to register again at the University until his or her indebtedness has been discharged. Such a student who has been preregistered shall have his or her registration cancelled without further notice if payment of previous indebtedness has not been made one month prior to the beginning of classes for the following semester. Grade reports of non-matriculating students will not be released unless all indebtedness has been discharged.

REFUND POLICY

A full-time student who withdraws from the University before the beginning of the fifth week will be granted a pro-rata refund of tuition upon application to the Office of the Bursar. The date of official academic withdrawal as recorded by the Office of the Registrar is the primary basis of any claim for tuition refund but such refund also may be authorized for documented reasons of an extraordinary nature which are acceptable to the Bursar. A student who makes an advance payment and then for any reason does not attend any part of the next semester or term at the University, *and who so notifies the Office of the Registrar within the first ten days of a semester*, will be given a full refund of tuition and fees. The special application fee is not refundable. Refunds of tuition charges are granted to full-time students (including applicants for full-time status) in accordance with the following schedule:

Before the beginning of the second week	80% refund
From the second week but before the third week	60% refund
From the third week but before the fourth week	40% refund
From the fourth week but before the fifth week	20% refund
From the fifth week on	No refund

Part-time students are eligible for tuition refunds according to the following schedule:

Course withdrawal before the first class	100% refund
Course withdrawal after first but before second week	50% refund
Course withdrawal from the second week on	No refund

RULES GOVERNING MASSACHUSETTS RESIDENCY

These rules and regulations shall apply to the classification of students at the University of Lowell as Massachusetts or non-Massachusetts students for tuition purposes.

Definitions

(1) **ACADEMIC PERIOD** - A term or semester in an academic year or a summer session, as prescribed by the Board of Trustees or under their authority.

(2) **CONTINUOUS ATTENDANCE** - Enrollment at the University for the normal academic year in each calendar year, or the appropriate portion or portions of such academic year as prescribed by the Board of Trustees or under their authority.

(3) **DOMICILE** - A person's true, fixed and permanent home and place of habitation, where he or she intends to remain permanently or for an indefinite time.

(4) **EMANCIPATED PERSON** - A person (a) who has attained the age of 18 years, or (b) if under 18 years of age, whose parents have entirely surrendered the right to the care, custody and earnings of such person and who no longer are under any legal obligation to support or maintain such person, or (c) a person who has no parent. If none of the aforesaid definitions apply, said person shall be deemed an "unemancipated person."

(5) **PARENT** - With respect to a person (in the case of an adopted person, inserting the adjective "adoptive" before the words "father" and "mother" wherever used):

(a) the person's father;

(b) if the person's father dies, either the legal guardian or if no legal guardian is appointed, the person's mother;

(c) if neither the father nor mother is living and no legal guardian is appointed, the person who then stands **in loco parentis** to the person;

(d) if the father and mother are divorced, the person to whom legal custody of the person is awarded;

(e) if the father and mother are divorced, separated or unmarried and legal custody has not been awarded, the father or the mother, as the case may be, with whom the person lives or, if he lives with neither and the father is living, the father.

(6) **RESIDENCE** - A place of habitation.

Rules for Determination of Domicile

(1) Domicile is not acquired by mere physical presence in Massachusetts while the person is carrying on a course of study at the University or while the person is engaged in employment for a specified term unless Massachusetts is otherwise the domicile of the person.

(2) Domicile at birth may be changed thereafter, by action of the parent in the case of an unemancipated person or by action of the person himself in the case of an emancipated person.

(3) A person claiming Massachusetts as his domicile shall furnish evidence to support such claim. The burden of proof in all cases is upon the person making the claim. The following shall be of probative value, although not necessarily conclusive, in support of a claim of domicile within Massachusetts:

(a) Birth certificate;

(b) Motor vehicle registration and/or operator's license;

(c) Voting or registration for voting;

(d) Certified copies of Federal and State Income Tax returns;

(e) Property ownership;

(f) Continuous physical presence in Massachusetts during periods when not enrolled as a student;

(g) Permanent employment in a position not normally filled by a student;

(h) Reliance on Massachusetts sources for financial support;

(i) Former domicile in Massachusetts and maintenance of significant connections therein while absent;

- (j) Domicile of parent within Massachusetts.

Evidence submitted in support of an assertion of domicile or of parental relationship shall be in such form as the President of the University or his designee may require. Copies of official records or documents shall be authenticated by a proper officer. Assertions of fact made other than by an authenticated copy of an official record shall be certified as to accuracy and completeness by the person submitting the same.

Proof of Parental Relationship

A person asserting that he or she is an emancipated person shall furnish evidence to support such assertion. Such evidence may include:

- (a) Birth certificate or any other legal document that shows place and date of birth;
- (b) Legal guardianship papers - court appointment and termination must be submitted;
- (c) Statements of the person, his parent(s), guardian(s), or others certifying no financial support;
- (d) Certified copies of Federal and State Income Tax returns filed by the person and his or her parent(s);
- (e) Where none of the foregoing can be provided, an affidavit of the emancipated person in explanation thereof and stating fully the grounds supporting the claim of emancipation.

Rules for Classification

(1) Every emancipated person applying for admission to the University who has maintained a residence in Massachusetts for a period of not less than eighteen continuous months next preceding the date of his or her application and has established a domicile in Massachusetts shall be eligible for classification as a Massachusetts student for tuition purposes.

(2) Every unemancipated person applying for admission to the University, whose parent has maintained a residence in Massachusetts for a period of not less than one continuous calendar year next preceding the date of application and has established a domicile in Massachusetts, shall be eligible for classification as a Massachusetts student for tuition purposes.

(3) Every emancipated person seeking a change in classification who has maintained a residence in Massachusetts for a period of not less than one continuous calendar year next preceding the beginning date of the academic period for which he or she registers and has established a domicile in Massachusetts shall be eligible for classification as a Massachusetts student for tuition purposes for such academic period.

(4) Every unemancipated person seeking a change in classification, whose parent has maintained a residence in Massachusetts for a period of not less than one continuous calendar year next preceding the beginning date of the academic period for which the person registers and has established a domicile in Massachusetts, shall be eligible for classification as a Massachusetts student for tuition purposes for such academic period.

(5) A person having his or her domicile elsewhere than Massachusetts shall not be eligible for classification as a Massachusetts student for tuition purposes except as herein provided.

(6) Any person who is registered at the University as a Massachusetts student shall be eligible for continued classification as a Massachusetts student for tuition purposes (until attainment of the degree for which he or she is then enrolled) during continuous attendance at such institution.

(7) A member of the Armed Forces of the United States and his spouse and unemancipated children shall, while he or she is on active duty and stationed in the Commonwealth of Massachusetts, be eligible for classification as Massachusetts students for tuition purposes.

(8) A citizen of any other country other than the United States who is in this country on a permanent immigration visa can be classified as a Massachusetts student for tuition purposes if he or she has been domiciled in the state for a period of not less than one calendar year next preceding the beginning date of the academic period for which he or she registered under circumstances indicating his or her intention to reside permanently in Massachusetts.

Change of Classification

No application for change to classification as a Massachusetts student for tuition purposes submitted later than the first day of classes shall affect a classification during the then current academic period.

Penalty for Misrepresentation

Misrepresentation in or omission from any evidence submitted of any fact which if correctly or completely stated would be grounds to deny classification as a Massachusetts student for tuition purposes shall be cause for exclusion or expulsion from or other disciplinary action by the University.

Appeals

Appeal from a determination denying classification as a Massachusetts student shall be initiated by filing a written request with the President of the University or his designee specifying the particular grounds for said request.

Authority of Board of Trustees

Nothing contained herein shall be construed as limiting or prohibiting the authority of the Board of Trustees to waive or reduce tuition charges.

NEW ENGLAND REGIONAL STUDENT PROGRAM

Students who meet the eligibility requirements for residents of their state and admission requirements of a University program approved as a regional curriculum will receive preference in admission among out-of-state applicants and will be charged the in-state tuition upon admission. It is assumed that students accepted into a program of study offered under the New England Regional Student Program will remain in the same field of study. If a student transfers into a program which is not included in the Regional Student Program, out-of-state tuition will be applicable as of the date of transfer.

The following is a listing of programs of the University of Lowell which are offered under the New England Regional Student Program.

Lowell Program

Environmental Science
Health Education
Health Services Administration

Industrial Technology

Meteorology
Nuclear Engineering
Plastics Engineering
Radiological Health Physics

Eligible States

Connecticut, Maine, Rhode Island
Rhode Island, Vermont
Connecticut, Maine, Rhode
Island, Vermont
Connecticut,
Rhode Island
All New England States
All New England States
All New England States
All New England States

FINANCIAL AID

Financial aid consists of scholarships and grants (the awarding of money for which no repayment is required), self help in the form of loans (money lent to a student to be repaid during a specified period, usually following the termination of University studies) and employment (government or University sponsored work for all or part of an academic year). Awards are made on a yearly basis and are dependent upon the availability of funding from specific sources, proven financial need, and the criteria of specific financial-aid sources.

PRIVATE ORGANIZATION LOAN PROGRAMS

Such private organizations as church groups, credit unions, labor unions, veterans organizations, and service and trust corporations administer student loan programs for qualified students. Information concerning loans from private organizations is available through high-school guidance offices and the Office of Financial Aid of the University.

Commercial loans to parents of students are of two types: loans from commercial banks and from lending institutions specializing in college loans. Generally, commercial loan plans provide payments either to a university or to parents and guardians of the student, with repayment in equal monthly installments. The length of repayment may vary from one semester through six years.

STATE GUARANTEED LOAN PROGRAMS

Another type of loan available to students of the Commonwealth is the Massachusetts Higher Education Loan Plan. The determination of financial need for this loan program is less rigorous than for loans administered by commercial banks and loan agencies. A student who is a permanent resident of Massachusetts may borrow up to \$2,500 per year (for a maximum of \$7,500 for baccalaureate study and of \$15,000 for combined undergraduate and graduate studies). There is no interest charge on such loans while the student is in attendance at the University. Upon leaving the University, a student is charged interest at a rate of 7% per year on the unpaid loan balance. Monthly repayment of a state guaranteed loan begins within one year of graduation. Loan applications are available at commercial and mutual savings banks, federal savings and loan associations, credit unions, and cooperative banks in the town of the student's residence. Specific inquiries from Massachusetts residents regarding this program should be addressed to the Massachusetts Higher Educational Assistance Corporation, 1010 Park Square Building, Boston, Massachusetts 02116.

UNIVERSITY ADMINISTERED FEDERAL ASSISTANCE PROGRAMS

At the University of Lowell, financial aid is available to full-time students who are citizens of the United States or who have permanent visa status. Aid is granted for the fall and spring semesters and, in some instances, for summer sessions. In order to qualify for financial aid, all incoming and transfer students, as well as continuing upperclassmen, must file a Financial Aid Form or, if a resident of Massachusetts, a Massachusetts Financial Aid Form. These completed forms must be mailed directly to the College Scholarship Service, the address of which is listed on the front of the Financial Aid Form. The University also requires all candidates for financial assistance to complete special University forms for loan, scholarship, and work study and to file these forms with the Office of Financial Aid. Copies of these required forms may be secured by writing to the Office of Financial Aid, University of Lowell (South Campus), Lowell, Massachusetts 01854.

The Basic Educational Opportunity Grant Program

It is the policy of the University of Lowell that all students in need of financial assistance must file for the federal Basic Educational Opportunity Grant program since the criteria of this program are the bases for determining student need. All students, except those who have received a baccalaureate degree, are eligible to apply. Applications for these grants may be obtained from high school guidance offices, the Office of Financial Aid, federal post offices, and public libraries. The maximum award, under the federal Basic Educational Opportunity Grant program is \$1,600 per year during 1978-79 and \$1,800 per year during 1979-80. All financial assistance, except employment earnings, are paid in installments at the beginning of each semester in the form of a credit on the recipient's bill. If the aid exceeds the bill, the remainder of the assistance is normally available to the student within six weeks after registration. If the aided student withdraws from the University, any refund of University fees or charges must first be applied to the aid fund for reimbursement of the total amount of semester assistance.

National Direct Student Loans

A student may borrow up to \$1,500 per year under this program. Interest, at 3% per year, begins nine months after graduation or withdrawal from the University. The loan is to be repaid within ten years. To be eligible, students must be American citizens or permanent residents of the United States, must be accepted for admission or already enrolled and in good standing in the University, and must have demonstrated financial need. Eligible students should not assume that they will receive a National Direct Student Loan since available funds are inadequate to meet the needs of all qualified applicants. The average National Direct Student Loan is between \$300 and \$600.

Supplemental Education Opportunity Grants

In conjunction with other forms of financial aid, supplemental grants provide assistance to students of exceptional financial need who would not otherwise be able to consider a college education without attendant indebtedness which would seriously impair future careers. Applicants must anticipate receiving other financial aid for at least the amount of the supplemental grant for which they apply.

Nursing Student Loan Program

The nursing student loan program assists needy students who need financial assistance to pursue a course of study in nursing. The goal is to increase the opportunities for youth seeking careers in nursing by providing long-term, low-interest loans. Repayment begins one year after separation from the University, unless military service intervenes, in which case repayment is postponed until one year after the termination of military service. Simple interest at 3% per year is charged and repayment must be completed within ten years following graduation or withdrawal from the University. Cancellation privileges of up to 85% may be granted to nursing graduates who are employed by public or non profit private agencies. In addition, there are cancellation privileges for nursing graduates who enter into agreements with the Secretary of Health, Education and Welfare to practice for at least two years in areas specified by the Secretary to be areas of dire need.

Nursing Scholarship Program

This program, which provides scholarship assistance to students pursuing careers in nursing, is awarded by the Financial Aid Office and does not require the matching of any other form of financial aid. Additional details (requirements, amounts available to applicants, the number of recipients, etc.) may be secured from the Office of Financial Aid.

College Work-Study Program

Under the work-study program, a student who meets established financial aid criteria can be assigned part-time employment on campus. Students may work 15 hours per week while attending classes full time and may be employed up to 40 hours per week during vacation and summer periods.

UNIVERSITY LOANS

Emergency Loans

Limited, short-term loans are made to students by the Dean of Students to cover unexpected personal emergencies. These loans are to be repaid at a time specified by the loan note, which a student must sign at the time an emergency loan is granted.

Bookstore Loans

Students may apply for Bookstore loans through the University of Lowell Associates, Inc. The maximum amount which can be borrowed by a student over the four-year undergraduate period is \$500. Repayments made while the student is enrolled in the University are interest free. On those loans which are not repaid until after graduation or withdrawal there is an interest charge at 4% per year beginning three months after termination of enrollment. Repayments become mandatory at a rate of \$10 per quarter, plus interest, during the first year. Thereafter, repayments are \$20 per quarter, plus interest, until the loan is repaid. Additional or complete repayments are accepted at any time.

STATE SCHOLARSHIPS

Board of Higher Education Scholarships

The Board of Higher Education awards scholarships to qualified residents of Massachusetts on the basis of academic promise and demonstrated financial need. Applications for these scholarships must be made on the Massachusetts Financial Aid Form. New applicants should consult their high-school guidance counsellors for filing deadlines.

Commonwealth of Massachusetts Scholarships

Twenty tuition scholarships are available to residents of the Commonwealth who are enrolled in the freshman class at the University. Awards are made on the basis of combined SAT scores and demonstrated financial need. These scholarships are renewable subject to satisfactory academic standing in the University.

CITY OF LOWELL SCHOLARSHIPS

The City of Lowell supports 18 annual scholarships to the University for entering freshmen, 10 of which are reserved for students who have been admitted to the nursing program. These scholarships, for qualified residents only, provide \$300 during the eight semester undergraduate period. Nursing scholarship recipients who transfer to other majors or who fail to maintain satisfactory academic standing, forfeit their scholarships. Application forms for City of Lowell scholarships may be secured in the guidance office of Lowell High School or the University Financial Aid Office.

UNIVERSITY SCHOLARSHIPS AND AWARDS

The University of Lowell has endowed scholarship funds to assist students who satisfy qualification requirements designated by donors. Students must identify those awards for which they may be eligible and must file the appropriate forms with the Office of Financial Aid.

Scholarships and Awards Primarily for Underclassmen

Alumni Association Scholarships

Scholarships cover tuition and miscellaneous fees and are renewable provided satisfactory academic standing is maintained. Matriculating students are eligible to apply.

American Society for Medical-Technology Education and Research Fund

This scholarship is made available through the Fisher Scientific Company to full-time medical-technology students who have completed at least the first semester of their sophomore year and is awarded for completion of both the junior and senior years.

Roland E. Derby Memorial Scholarship

This scholarship, established in the memory of Roland E. Derby, Sr., provides a \$500 scholarship to two sophomore students and is limited to students pursuing degrees in chemistry or chemical engineering and is awarded alternately in each of these fields. Recipients are selected by the Scholarship Committee of the University on the basis of scholastic achievement with due consideration being given to financial need. Scholarships may be renewed for the junior and senior years provided that satisfactory academic records are maintained.

Eastman Kodak Undergraduate Scholarship

This scholarship is granted to University departments from which certain employees of Eastman Kodak have graduated and is awarded in accordance with departmental policies. At the present time, scholarships are available in mechanical engineering and chemistry.

Genradco Trust Scholarship Fund

Scholarships are awarded from the Genradco Scholarship Trust Fund to the highest ranking female and the highest ranking male in each of the three upperclasses and are restricted to students majoring in industrial technology.

Barnett D. Gordon Award

This award is made to an incoming freshman student who has achieved the highest score in the mathematics examination of the Scholastic Aptitude Test.

Honeywell Fund Scholarship

A generous gift from Honeywell is to be utilized as follows: 3/4 to be awarded to students solely on the basis of need and 1/4 to be awarded to upperclassmen in the field of electro-optics.

Kalman Kobrin Athletic Scholarship

This scholarship is presented by the Alumni Association through the Kalman Kobrin Fund to a student who displays athletic ability as well as high scholastic aptitude.

Lowell Sun Charities Scholarship Fund

This fund, established by the Lowell Sun Charities, provides tuition scholarships, renewed annually, for greater-Lowell residents. Recipients must demonstrate good moral character as well as high academic standing.

Monsanto Company Plastics Technology Fund

This scholarship is awarded annually to a student majoring in plastics engineering. The award is based upon academic excellence.

Rohm & Haas Scholarship

This scholarship is awarded annually to a student majoring in plastics engineering. Selection of recipients is based upon academic performance.

Mark Wagner Memorial Scholarship

This scholarship is awarded annually to a student majoring in music. Applicants must be residents of the greater-Lowell area for a period of not less than five years, must have financial need and must have achieved good scholarship. Accordion students are given first preference.

Jacob Ziskind Memorial Fund for Freshmen

Scholarship funds are restricted to freshmen. Recipients must exhibit good character, scholastic aptitude, initiative, and ability.

Scholarships and Awards Primarily for Upperclassmen

Allied Chemical Corporation Scholarship

The Allied Chemical Corporation has made available on a one-year basis a scholarship for an upperclassman majoring in plastics.

Michael K. Anderson Memorial

Established by Irving Anderson in memory of his son Michael, this award is made to a student in the College of Music who is under the age of 25.

Boston Paper Trade Association Award

One \$300 award is available to an upperclassman enrolled in the chemical engineering paper option program. Award is based on character, proven interest in the paper industry, and academic performance.

Custom Materials, Division of 3M Corporation, Scholarship

Custom Materials of Chelmsford has made available on a one-year basis a scholarship for an upperclassman majoring in plastics technology.

Foster Grant Scholarships

The Foster Grant Company, Inc., of Leominster makes available two one-year scholarships to deserving students in plastics technology. Recipients must be residents of Massachusetts and preference is given to students living in the Leominster area. Other students may qualify if applicants from Leominster or Massachusetts are ineligible. Qualifications for scholarship award require contributions to extra-curricular activities and suitable personality characteristics.

Gehring Foundation Memorial Scholarships

Scholarships in the memory of Henry C. Gehring and his son, Edward, have been made for upperclassmen.

Russell Weeks Hook Scholarships

Six undergraduate scholarships, two in each of the three upperclasses, are awarded to needy students who are majoring in chemistry.

Mobay Scholarship

The Mobay Chemical Corporation of Pittsburgh sponsors a scholarship on a one-year basis which is awarded to a deserving upperclassman in plastics engineering.

Paper Engineering Scholarship

Twelve or more scholarships with annual stipends of \$500 are available to upperclassmen and selected graduate students who are enrolled in the engineering-paper option program. Applicants must have achieved minimum grade-point averages of 2.00. Contributors to the scholarship fund include many nationally known paper companies.

Harry Reimer Award

A medallion and a U.S. bond are given to an individual who is selected on the basis of scholarship, extra-curricular activities, and over-all contributions to the University over the four-year undergraduate period.

Society of Plastics Engineers Scholarships

Two scholarships are granted annually by the Eastern New England Section of the Society of Plastics Engineers, Inc., to upperclassmen majoring in plastics engineering. One scholarship is awarded by the Southeastern New England Section of the Society of Plastics Engineering to an upperclassman majoring in plastics engineering.

Carl Tapper Award

This award is made to a senior in the College of Music who has established the best record in the two required semesters of apprentice teaching and who shows the most promise for success in a career of music education.

Textile Veterans Association Award

A medallion and a U.S. bond are given to an individual who is selected on the basis of scholarship, extra-curricular activities, and over-all contributions to the University over the four-year undergraduate period.

Jacob Ziskind Memorial Scholarship Fund

This fund, established by the Trustees of the Jacob Ziskind Trust for Charitable Purposes, provides scholarships to sophomores, juniors, and seniors who have demonstrated high scholastic accomplishment, who exhibit qualities of good character and leadership and who are in need of financial assistance. Preference is given to those students who have received grants from the Jacob Ziskind Memorial Fund for Freshmen.

VETERANS BENEFITS

The Veterans Administration has approved the University of Lowell for undergraduate study. A student eligible for veterans training must take his honorable discharge to the Veterans Administration (Kennedy Memorial Building, Government Center, Boston, Massachusetts) where he will receive a certificate of eligibility to be presented to the University of Lowell. Upon receipt of this certificate, the University will notify the Veterans Administration to initiate monthly payments to the student. Veterans who are registered for 12 or more semester credits are paid for full-time training; for 9-11 semester credits, three-quarter time training; and for 6-8 semester credits, half-time training.

A citizen of Massachusetts who is defined as a "Vietnam Veteran" and whose service is creditable to the Commonwealth may be issued a certificate of tuition exemption if he is enrolled in the University as a full-time student. Certificates must be renewed annually prior to the beginning of each academic year, are in effect only during such time as the student remains in good standing at the University, are limited to a period of study which may not exceed four years, and are issued during an eight-year period from the date of discharge or release from

active service. In order to receive a certificate of tuition exemption, an eligible veteran must present his discharge papers at the Office of the Adjutant General, State House, Boston, Massachusetts, and must provide the Office of the Registrar, University of Lowell, with a certificate of eligibility.

A veteran who is entering the University for the first time is required to pay the application and acceptance fees within the period designated on the application form for admission. The acceptance fee of \$50.00 is refundable, upon request, after the certificate of tuition exemption has been issued by the Office of the Registrar. The application fee of \$10.00 is not refundable. Tuition exemptions do not cover fees of the University.

Inquiries directed to the University concerning veterans affairs should be addressed to Mr. Louis Demetrolakos, Office of the Registrar, University of Lowell, Lowell, Massachusetts 01854.





HOUSING AND FOOD SERVICES

The University campus is oriented to a program which recognizes the educational advantages of both classroom instruction and extracurricular activities. It is the objective of the residence hall program not only to provide the best possible dining and housing arrangements but also to provide the opportunity for individual students to develop academic excellence, a sense of responsibility for their own actions, and the leadership and social skills expected of college graduates. The University attempts to develop these opportunities to the fullest extent and to make residence hall life an important asset of its educational mission.

GENERAL HOUSING POLICY

To be eligible for occupancy in University resident halls, a student must register at the University of Lowell as a full-time undergraduate student. Graduate students who register for 9 or more credits are eligible for residence during the period of their attendance, pending availability of space. Individual housing eligibility is not transferable. A student who withdraws from the University, or who withdraws from all courses, must terminate occupancy of University residence halls.

Rooms are contracted for the full academic year, exclusive of periods when the University is in recess. Students are not permitted to remain in the residence halls during periods when the University is not in session. The University is not responsible for providing housing accommodations during vacation periods and those students who cannot return to their homes during these periods must make their own off-campus housing arrangements. An annual study is made by the University to determine the most effective assignment of housing facilities. When this determination has been made, upperclassmen are given preference in selecting rooms and roommates. Incoming freshmen are assigned dormitory space by the Housing Office according to the receipt of application data sheets. Room assignments in residence halls are made for the academic year and changes of assignment are permitted only for compelling reasons and upon formal application to the Resident Advisor and following official approval by the Office of Housing. The University accepts no responsibility for student residences outside of University supervised facilities.

Room Rent and Reservation Deposit

The room rental charge is \$720 per academic year and is payable in two equal installments. Payment for the first semester is due on or before August 15 or, in the case of late acceptance, within fourteen days of billing. Second semester rent is due and payable as noted on the spring semester invoice. Each student must submit a \$50 room guarantee deposit at the time the residence hall reservation and contract is submitted to the Business Office. This deposit reserves the room until occupancy and is applied to the second semester room rental. Any student who cancels his or her residence hall contract prior to the beginning of the first

semester or who withdraws within the first five weeks will forfeit the \$50 room guarantee deposit. Any student who withdraws subsequent to the first five weeks but prior to the beginning of the second semester will forfeit \$25 of the room guarantee deposit.

Refund Policy

Refunds of dormitory rental fees to withdrawn students will be made in accordance with the following schedule:

From time of reservation but before the second week	80% refund
From the second week but before the third week	60% refund
From the third week but before the fourth week	40% refund
From the fourth week but before the fifth week	20% refund
From the fifth week on	No refund

Residence Hall Contracts

Individual residence halls may develop and adopt rules and regulations of student behavior which are not contrary to established policy of the Board of Trustees. All residents, in any event, are subject to established prohibitions and observances which are specified by official contracts and are required to comply with University policies concerning billing, health records, automobiles, parking, and food services.

Insurance

The University does not carry insurance which will compensate students or their families for losses suffered on the campus due to such hazards as fire, theft, or water damage. For most families such insurance is highly desirable, either as an extension of present home insurance or as a special contract.

Room Furnishings

Dormitory rooms are provided with beds, mattresses, dressers, desks, desk chairs, closets, and mirrors. In addition most resident halls have study lounges, kitchenettes, laundry facilities, television lounges, and vending machines. Each student is expected to provide pillow, linen, and blankets or to contract for such items with a local linen service.

Damage Deposit Requirement

Residence halls are constructed, equipped, and maintained through funding provided by bonds issued by the University of Lowell Building Authority. Room rents and damage assessments are established to provide a fund sufficient to pay building and operating costs. This funding policy requires that a student who has registered for and occupied a room in a residence hall be held financially responsible for room rent and for damages to both his or her occupied room and common areas. Students are individually responsible for damage to the furniture and quarters which they occupy. In the event of damage to common areas (corridors, lobbies, shower rooms, etc.), the cost of repairing such damage

will be apportioned among all residents of the concerned residence hall. All resident students must have on deposit a total of \$25 with the Business Office at the beginning of each academic year. This sum will be held in escrow pending assessment of residence hall damages and will be refunded upon termination of residence hall occupancy when such damages have not been assessed. Any interest accrued from the damage deposit shall be held in a trust fund by the Office of Student Services to be used for the general improvement of residence hall life. In the event that assessed damages are in excess of the deposit, an appropriate bill will be rendered.



DORMITORY FACILITIES

Bourgeois and Leitch Halls

Located on Pawtucket Street (North Campus) overlooking the Merrimack River, Bourgeois and Leitch Halls accommodate approximately 600 freshman and upperclass male students, predominately in double rooms. The dormitory complex also provides a few triple rooms and contains lounges, recreation and game rooms, and laundry facilities. Behind the complex are a lighted athletic field and basketball, volleyball, and tennis courts.

Concordia Hall

Located on Rolfe Street (South Campus), Concordia Hall is a six-story building which overlooks the Merrimack River. Dormitory facilities for 180 women include television lounges, a recreation room, a kitchennette, a laundry room, and five music practice cubicles with pianos.

Eames Hall

Located at 50 University Avenue (North Campus), Eames Hall houses approximately 100 students (primarily women). The first floor has been extensively

renovated to serve the needs of handicapped male and female students. This dormitory houses the customary laundry and recreational facilities, including a television lounge.

Fox Hall

Located on the North Campus across the street from the Bourgeois-Leitch complex, Fox Hall offers many varied facilities. The first six floors contain the student activities area of the North Campus (rathskeller, game rooms, meeting and conference rooms, and lounge areas) and a 700 seat dining hall which can be converted for entertainment use. The upper twelve floors house coeducational dormitory facilities (single sex by floors) for approximately 500 students. Kitchen facilities are available on alternate floors and television lounges are located on every fourth floor. Residents of Fox Hall who wish to have individual telephones installed in their rooms may do so by making appropriate arrangements with the Lowell Business Office of the New England Telephone Company.

Smith Hall

Located at 20 University Avenue (North Campus), Smith Hall houses approximately 100 male students in double rooms. Located adjacent to the Alumni-Lydon Library, this dormitory has been chosen by upperclassmen for its quiet locale. A dining hall for 175 students is located on the ground level.

RESIDENCE HALL STAFF

Staff members of each residence hall plan and direct all student personnel administrative activities, advise elected officers and committee chairpersons in the residence halls, and provide individual and group advising. Under the guidance of the Resident Advisor, floor proctors lend assistance and support to the development of interest in a strong, responsible and active student organization for residence-hall life. The Resident Advisors are responsible to the Assistant Dean of Students, who supervises and coordinates the administrative responsibilities associated with the operational aspects of residence hall living. The proctor staff is especially valuable to freshmen for providing information concerning academic and social organizations and cultural and educational activities and for assisting in the development of those extra-curricular pursuits which can be a meaningful part of one's total education.

Applications for residence hall counselling positions are accepted late in the first semester for the following academic year. Each applicant will be interviewed by the Resident Advisor and reviewed by the Assistant Dean of Students. All applicants will be notified of the results of their applications prior to the end of the second semester.

FOOD SERVICES

Dining hall facilities are located in the Cafeteria Building (South Campus) and in the Fox Student Union and Smith Hall (North Campus). Dormitory residents

are required to subscribe to one of the four food plans listed below. Students residing in Leitch Hall, Bourgeois Hall, and Fox Hall are served in the dining hall of the Fox Student Union. Residents of Smith Hall and Eames Hall are served in the cafeteria which is located in Smith Hall. Students residing in Concordia Hall are served in the Cafeteria Building (South Campus). A check, money order, or draft for the full amount of the selected meal plan must be forwarded to the Office of the Bursar when payment is made for University tuition and fees. This check, money order, or draft must be made payable to the *University of Lowell Cafeteria Account*. The dining facilities of Smith Hall (North Campus) and the Cafeteria Building (South Campus) are open to faculty, staff, and commuting students on a cash basis.

<u>Option</u>	<u>Per Semester*</u>
PLAN I	
Twenty-one (21) Meals	438.63
Three meals per day, seven days a week (Monday through Sunday)	
PLAN II	
Fifteen (15) Meals	408.68
Three meals per day five days a week (Monday through Friday)	
PLAN III	
Fourteen (14) Meals	403.68
Two meals per day, seven days a week (Breakfast and Dinner ONLY) (Monday through Sunday)	
PLAN IV	
Ten (10) Meals	392.83
Two meals per day, 5 days a week Choice of two meals, Monday through Friday	
a. Lunch & Dinner	
b. Breakfast & Dinner	

*Meal plan costs are subject to change each semester.

DINING HALL REGULATIONS

Food identification cards must be presented at the assigned dining facility when a student has selected a meal plan. Any use of a food identification card by or for an individual other than the card owner is forbidden. Since unauthorized use of an unlimited seconds card will have a direct impact upon subsequent food rates, students should realize that they have a personal interest in the proper utilization of such cards. All food served in dining facilities which provide the unlimited seconds option must be eaten in the assigned dining hall. Students who withdraw from the University are required to surrender their food identification cards. Decals will be issued to students upon payment of their spring semester board. All food identification cards which have been issued during the fall semester are invalid for the spring semester unless such decals have been applied to the previously issued identification card. Photographs are taken for food identification cards when issued. Students who have lost their identification cards are charged a fee for a second photograph.



LIBRARY SERVICES

The University libraries, which consist of the Alumni-Lydon Library (North Campus) and the O'Leary Library (South Campus), have a seating capacity of 2,000. Present library holdings include over 300,000 books and periodicals and a large number of such non-print materials as audio recordings, video tapes, films, and microforms. The O'Leary Library has holdings in the humanities, fine arts, education, and music and houses the Educational Resources Information Center microfiche collection, 118 listening stations, and a collection of music scores. The Alumni-Lydon Library is rich in resources for science and business management fields. Special resources of the University libraries include rare books and artifacts relating to the history of the City of Lowell, the Boston and Maine Railroad Historical Society Collection, the Middlesex Canal Association, the Proprietors of the Locks and Canals on the Merrimack River, records of the Greater Lowell Chapter of the American Association of University Women, memorabilia of Harriet Farley Dunlevy (editor of the *Lowell Offering*), and 763 historical photographs. Other valuable resources include teacher-education curriculum materials, New England maps published by the Geological Survey of the U.S. Department of the Interior, gerontological resource materials, and educational media. The University libraries provide interlibrary loan services and also function as a U.S. Government depository.

LIBRARY REGULATIONS

New students should have their pictures taken for an identification card at the beginning of the academic year. This photo-identification card must be presented upon request for admission to the library facilities and whenever a student wishes to take materials from a library. The identification card is valid until graduation, termination of enrollment, or revocation by the Dean of Library Services and is not transferable. The owner of the identification card is responsible for all material charged to his or her card until such time as library authorities have been informed that the card has been lost or stolen.

Students are not permitted to bring food or beverages into library areas and are prohibited from socializing, conversing, or generally engaging in activities which are contrary to that atmosphere which is conducive to research and study in a library setting. A student's library privileges, including the right to study in library areas, may be revoked when library rules concerning appropriate conduct have been violated. Such revocation of library privileges is entirely within the province of the Dean of Library Services.

Students who retain regular circulating materials for three or more weeks beyond their authorized period of circulation, who retain reserve materials for two weeks or more beyond their authorized period of circulation, or who retain library materials after the beginning of the final examination period without explicit permission from the library staff shall forfeit their library privileges. Students who steal or maliciously deface library property forfeit their library

privileges indefinitely. Reinstatement of library privileges may be granted only by the Dean of Library Services. Students who incur library fines, lose library materials, or damage library property must discharge their financial obligations to the University Library before the end of the semester in which such obligations have been incurred. Administrative dismissal from the University may be invoked when a student fails to comply, after due notice, with a direction to discharge library fines and obligations. Seniors who have not discharged their financial indebtedness to the University Library by the end of May will not be permitted to graduate until such time as they have discharged their indebtedness and their records have been cleared by the Business Office.

Library Fines

Library fines are levied according to the following schedule:

1. Overdue books and phonograph records:
 - a. Regular circulating books and phonograph records—10¢ a day per book or record;
 - b. Reserve material—25¢ per ½ hour to a maximum of \$2.00 per book or record for the first day and \$1.00 per book or record for each succeeding class day per overdue item;
 - c. Recalled material—\$1.00 per day for each book or record to a maximum of \$10.00 per book or record.
2. Lost Library materials:
 - a. Replacement cost of lost material plus
 - b. Processing fee of \$3.00 per lost item.
3. Accumulated fines:

Students who have lost library materials and fail to notify library authorities of their loss within two weeks of the mailing of official notification of delinquency must pay accumulated fines up to \$10.00 per book or record plus the replacement and processing fees levied for each lost item.

Circulation Regulations

Books may be borrowed for a period of two to four weeks and may be renewed unless they have been requested by other students or by faculty members. No more than five books may be charged at one time to a student. Copies of reserve books are to be used for a period of two hours, at which time they may be recharged for an additional two hours if other students have not requested them. Reserve books which do circulate may be charged after 1 pm and are due at 9 am the following class day or (at the discretion of the library director for best accessibility) at some other designated time. Periodicals may not be taken from the Libraries. Students desiring to make extensive use of periodical articles are advised to make copies of the relevant portions of such articles on the self-operated photocopy machine. Students desiring to use periodicals, filmstrips, or microfilms within the Libraries must secure these materials through the circulation desks. Curriculum materials in the O'Leary Library which are not considered reserve items circulate for the regular loan period. PE phonograph records circulate for a one-week period. PH and PL phonograph records located in the Music Listening Room of the O'Leary Library *do not circulate*.



Library Hours

Monday-Thursday	8:00 am - 10:30 pm
Friday	8:00 am - 5:00 pm
Saturday	9:00 am - 5:00 pm
Sunday	2:00 pm - 10:00 pm

Holiday hours for each of the Libraries will be posted. During vacations, the Libraries will be open from 8:00 am to 5:00 pm but will be closed on weekends. Libraries open on the day before classes resume.

Additional Information

Additional information concerning the University Library System and interlibrary loan services is available at the reference desks.



STUDENT ACTIVITIES

At Lowell, the student can find an organization which suits his or her particular interest whether it be committee organizations, sports, government, religion, the arts, community service, honorary societies, politics, the military, or media. Major all-campus events are University Week and Spring Carnival. In addition, residence halls and student groups sponsor other all-campus events throughout the year. The variety of events on campus includes student art shows, concerts, movies, intramural sports, and scholarship awards ceremonies.

The Undergraduate Student Government, the Graduate Student Government, the Interfraternity-Sorority Council, and the Interdormitory Council provide unlimited opportunities in student government at the all-campus level. Leadership opportunities are provided in residence halls, student organizations, and Greek letter groups. Students also participate in the disciplinary system and in most University committees.

STUDENT GOVERNMENT

The Student Government of the University of Lowell is an elected undergraduate body whose purpose is to provide a formal means for promoting responsible and effective student affairs, for maintaining academic freedom, academic responsibility, and student rights, and for enhancing educational, social, and cultural opportunities on the University campuses. The Student Government consists of three branches: the Student Senate, the Activities Commission, and the Student Court.

The Student Senate is the legislative branch of the Student Government and consists of the President, the Vice-President, the Secretary and Treasurer, and seven Senators from each of the four undergraduate classes.

The Activities Commission is a seventeen member branch of the Student Government and is responsible for planning and funding concerts, mixers, and University events and for allocating funds to University clubs and organizations.

The Student Court is the interpretive branch of the Student Government and consists of nine justices. The chief responsibility of the Student Court is the interpretation of the Student Government Constitution, including by-law amendments and Student Government policy.

THE STUDENT UNION

The focal points of student activities are the newly constructed student union buildings on the North and South campuses. The Fox Hall Student Union on the North Campus contains a student activities area of six floors. Located in this area are a rathskeller, a game room, conference and meeting rooms, a theatre, and lounge areas. This facility also contains a dining hall with a seating capacity of 700 which can be converted to an open area for recreational use. Offices for student organizations, which are located in the North Campus Student Union, include the student newspaper, the yearbook, sororities, frater-

nities, and special interest clubs. The Student Union on the South Campus contains a student lounge and recreation area, offices and meeting rooms for student and alumni organizations, graphics and photography studios of the Department of Art, the South Campus branch of the University Bookstore, the PUB, and the Office of the Student Senate.

STUDENT ATHLETICS

Athletic Facilities

Athletic facilities are located on both campuses of the University. Costello Gymnasium on the North Campus houses a gymnasium with a seating capacity of two thousand, an auxiliary gymnasium, a wrestling-judo room, weight-training facilities, a gymnastics area, two handball and three squash courts, a modern rifle range, team dressing rooms, and locker rooms for students and faculty. Also located in the Costello Gymnasium is a collegiate swimming pool which lends itself to a diversified and complete aquatic program encompassing instruction, competition, and recreation. Athletic fields and four tennis courts are located in an area adjacent to the Costello Gymnasium and are adequate for an extensive array of sports activities. Athletic facilities of the South Campus are located in Mahoney Hall and include a gymnasium, locker rooms, weight-training facilities, and a co-ed training room. An athletic field and three tennis courts are located behind Dugan Hall.



Physical Activities

The objectives and course descriptions for the physical education program of the University are described in detail in a following section which is devoted to programs of the College of Health Professions.

Training Services

In cooperation with the University Health Services, the training staff provides care and treatment of athletic injuries and administers cold and heat therapy. Students may assist in the training program under the supervision of the full-time trainer.

Varsity Sports

Opportunities to participate in an extensive and varied varsity program are available to men and women of the University. Fall season activities are cross-country, rowing, soccer, women's tennis, field hockey, and volleyball. Winter activities include men's and women's basketball, indoor track, bowling, gymnastics, swimming and diving, ice hockey, skiing, and wrestling. Spring activities are baseball, golf, track and field, men's tennis, softball, lacrosse, and rowing. Many intercollegiate teams compete throughout the New England area during the regular academic periods and throughout the Eastern seaboard during off-season periods. Those teams or individuals who qualify compete in tournaments at the national level.

Intercollegiate Memberships

The University of Lowell is a member in good standing with the following athletic groups: The National Collegiate Athletic Association (NCAA), Eastern College Athletic Association (ECAA), New England College Athletic Association (NECAA), and Collegiate Sports Information Directors of America (COSIDA). Additionally, the University holds memberships in many of the major associations concerned with the support and regulation of particular sports activities.

Club Activities

Because most students are unable to make the commitment which is necessary for varsity-level competition, the University offers a wide choice of club activities and encourages collegiate competition among the many club squads. The following athletic organizations are recognized by the Student Government

Aero Sports Club	Judo Club	Sailing Club
Bowling Club	Karate Club	Skeet Shooting Club
Cross Country Ski Club	Ping-Pong Club	Ski Club
Football Club	Rifle & Pistol Club	Scuba & Skindiving Club

Intramural Activities

The office of the Intramural Director offers an extensive and varied intramural program at the University. Four leagues (Fraternity, Sorority, Independent, and Women) compete in such activities as touch football, volleyball, softball, swimming and diving, track and field, basketball, wrestling, rifle shoot, turkey trot, hockey, football and softball field days, as well as a wide range of individual activities: handball, squash, chess, badminton, paddleball, bike race, tennis, and cross country. Interested students, faculty, and staff are encouraged to participate in any intramural activity.

Recreation

Students are urged to supplement their intercollegiate, intramural, and required activities with a regular program of recreation. Athletic facilities are available on a recreational basis throughout the year. Equipment needed for most recreational facilities may be obtained from the Issue Room upon presentation of the student's ID card.

STUDENT ORGANIZATIONS

Honorary and Professional Societies

American Chemical Society
American Society for Chemical Engineers
American Society for Civil Engineers
American Society for Mechanical Engineers
American Meteorological Society
American Nuclear Society
Association of Pulp and Paper Industry
Eta Kappa Nu (Electrical Engineering)
Institute of Electrical and Electronics Engineers
Music Educators National Conference
Pi Mu Epsilon (Mathematics)
Radiological Health Physics Society
Sigma Xi
Society for Physics Students
Society for Plastics Engineers
Society for the Advancement of Management
Society for Industrial Technology

Special Interest Organizations & Clubs

Statements of purpose of the following recognized organizations, the titles of which are often self-explanatory, may be obtained from the Office of the Dean of Students, Cumnock Hall, North Campus or from Student Government officers. Inquiries concerning organizations which have received recognition from the Association following the publication of this bulletin should be directed to officers of the Student Government.

African Students Organization
Agape Fellowship
Alliance for Knowledge
Alpine Club
Amateur Radio Club
Arab Students Club
Armenian Students Organization
Arnold Air Society
Art Co-op
Art History Club
Association for Student Advocates
Association to Foster Literary Consciousness
Astronomy Club
Athenaeum Society
Audio-Visual Society and Radio Station WJUL
Band
Biology Club
Black Student Union
Cadet Advisory Council
Campus Ambassadors
Cheerleaders
Chess Club
Chinese Student Circle
Circle K



Connector
Cricket Club
Drop-In Center
Economics Club
Equestrian Club
French Horn Guild
Handicapped Students Club
Health Education Club
Health Service Administrator Club
Hillel Counsellorship
History Club
Indian Student Association
Interdormitory Council
International Students Circle
Italian Club
Latin American Society
Mathematics & Computer Club
Newman Community



Peer Sex Information & Counselling Service

Pershing Rifles

Philosophy Club

Photography Club

Players

Psychology Club

Public Affairs Club

Public Interest Research Group

Ragtime Ensemble Club

Sociology Club

Sojourn

Spanish Club

Sports Car Club

Student Association for Medical Technology

Students International Meditation Society

Student Nursing Association

Students United for Public Education

Target & Rifle Club

University of Lowell Literary Club

Veterans Club

Wildmen, Wildwomen

Wireless Society

Women's Center

Social Fraternities and Sororities

Interfraternity & Sorority Council

The Interfraternity & Sorority Council is responsible for coordinating all phases of fraternal and sororal life and for organizing campus Greek Day and the Interfraternity & Sorority Weekend.

Alpha Omega

This sorority is dedicated to the ideals of service, social activity, academic excellence, and athletic endeavor, and each year completes projects which are consistent with these ideals. Alpha Omega is open to all female students of the University who are interested in developing a community of friendship and cooperation.

Alpha Sigma Tau

Beta Tau Chapter was established in 1975 and is the only national sorority presently on campus. The foremost purpose of the sorority is to supplement the formal education of University women with active involvement in sororal life. Abundant opportunities are provided to develop lasting friendships, to pursue community service projects, and to participate in team activities. Alpha Sigma Tau provides limited financial assistance to qualified members through its national affiliation.

Delta Kappa Phi

Members of Delta Kappa Phi are active participants in all aspects of University life and are united by personal commitments to that common brotherhood which has motivated all fraternity members since 1902.

Kappa Delta Phi

Kappa Delta Phi is a national fraternity which was founded in 1900. Upsilon Chapter at the University of Lowell, like its national organization, is devoted to the ideals of brotherhood, companionship, and compassion. If you are an individual who is interested in others and are motivated by our common goals and ideals, you may be interested in joining our brotherhood.

Kappa Upsilon

Kappa Upsilon was established at the University in 1974 and is one of the newer sororities on campus. Annual activities of the sorority include a "pot luck" dinner, a Thanksgiving raffle and semi-formal, and a two-week summer vacation at Hampton Beach. Community service activities include visits to children's hospital wards and nursing homes. Kappa Upsilon stands for kindness and unity and provides opportunities to establish lasting friendships.

Omicron Pi

Omicron Pi was founded in 1902 and is the oldest fraternity on campus. The fraternity was established by seven students of Lowell Textile School for the purpose of promoting brotherhood among its members and since its founding has been a society of men with common ideals and interests. Backed by a strong and loyal alumni, Omicron Pi has chosen to remain independent through the years although it has been approached by several national fraternities. In remaining independent, the fraternity membership believes that it remains free to govern itself without the burden of those commitments and expenses which are required by national organizations. Social functions of Omicron Pi include band parties, closed parties, trips, and a formal spring weekend. The brothers of Omicron Pi believe that their fraternity provides a great way for a person to grow mentally and socially.

Phi Gamma Psi

Phi Gamma Psi, whose presence at Lowell dates from 1904, is an independent fraternity committed to the principle of individual worth and to the ideals of friendship and loyalty. As a totally self-governing organization, free of the commitment and expense which are required by national affiliation, it is able to concentrate its efforts on the intellectual, physical, and social development of the brotherhood. Throughout the academic year, men of Phi Gamma Psi participate in all intercollegiate and intramural sports, the IFSC, professional clubs and organizations, and the Student Government. The fraternity house, which is ideally located between North and South Campuses, provides living quarters for eighteen brothers as well as providing recreational and study facilities for the entire brotherhood. New students are assured a hearty welcome at 406 Pawtucket Street, a short five minute walk from either campus.

Phi Sigma Rho

Phi Sigma Rho, the oldest sorority on campus, has been in existence for forty years. The sorority was established in 1937 under the name of "Phlame." In 1948, it adopted its Greek letters and crest and joined the league of fraternal organizations. Throughout the year, the sorority holds many social and community oriented functions and actively participates in intramural sports programs.

Pi Lambda Phi

Pi Lambda Phi was established in 1922 as an independent fraternity of Lowell Textile Institute. In 1949, the fraternity affiliated with the national association as Alpha Epsilon Chapter. The fraternity house is located at 77 Livingstone Avenue and is an active center for numerous brotherhood activities. Pi Lam men are athletes and social activists. They have won championships in volleyball, softball, and football and have sponsored a full range of activities. The numerous brotherhood activities include annual Halloween and Christmas parties for neighborhood children, as well as clambakes, spring formals, and open-band parties.

Sigma Kappa Epsilon

Sigma Kappa Epsilon, Beta Chapter, is an educational, professional, service and social



sorority open to all women of the University of Lowell community. The sorority was established in 1969 and received its state charter in 1970. The sorority letters are representative of its goals: "Service, Kinship, and Equality." Service projects which are promoted by the sorority include sponsorship of a Korean child, visits to VA hospitals, Christmas carolling at nursing homes, sponsorship of charity bake sales, and participation in "On Campus Day" programs for high school seniors. Social functions, which span the calendar year, include an annual ski trip, spaghetti suppers, a semi-formal weekend in the spring, canoeing on the Concord River, participation in Spring Carnival, and mixers.

Sigma Phi Omicron

Sigma Phi Omicron is a brotherhood of University men which is dedicated to the achievement of common social and campus goals. It is also an organization in which lasting friendships can be made, responsibility can be developed, and academic and social potentialities can be fulfilled. Fraternity brothers invite men who are interested in membership to visit their house at 105 Eleventh Street.

Tau Kappa Epsilon

Tau Kappa Epsilon is the largest international fraternity in the world and has 314 active chapters throughout the United States and Canada. TKE stresses the importance of individual character, self-worth, and esteem and provides opportunities for members to develop their potentialities to their fullest. TKE stands for men of ability, achievement, and concern. Individuals who are interested in learning more about TKE are invited to visit the fraternity house at 70 Methuen Street.



STUDENT REGULATIONS

Students of the University are subject to both academic regulations and rules of general conduct. Academic regulations are cited elsewhere in this publication under the heading "University Academic Policies" and in chapters devoted to college programs. The regulations cited below are concerned with the maintenance of basic standards of good order and conduct on campus and are formulated for the general welfare of the University community.

AUTOMOBILE REGULATIONS

All students owning or driving automobiles are required to register their vehicles with the University at the time of registration, or at the time thereafter when vehicles are first driven to the University, and to place parking stickers on the rear windows of their automobiles. Students who do not display parking stickers and who park on University property are subject to municipal court fines. Student parking is restricted to the Wilder Street parking lots (South Campus) and to the Pawtucket Street and Riverside Street parking lots (North Campus). Parking on city streets is permitted in accordance with posted regulations. Students are not permitted to park in University driveways or in faculty parking areas.

GENERAL SAFETY RULES

A continuous ringing of bells indicates that there is a fire and all persons, except those with specially assigned duties, are required to leave the building by the nearest posted or available exit. When a bomb threat is received at the University switchboard, the University alarm system will sound three short blasts, repeated once. As soon as the alarm is sounded, any student, regardless of an instructor's decision to cancel or to hold class, may leave the building without penalty. The student will be responsible for obtaining notes and assignments from the instructor or from another student. It should be clearly understood that a decision to leave or not to leave a building after the sounding of a bomb alarm can be made only by the student, who is solely responsible for his or her decision.

All students and faculty members are required to wear suitable eye protective glasses in laboratories.

Smoking is forbidden in all classrooms and laboratories, including all auditorium and theatre areas. The no smoking rule is required by both the Massachusetts Department of Public Safety and the State Insurance Agency and therefore shall be strictly enforced. Smoking is permitted in designated "smoking areas", faculty and staff offices, dormitory rooms, and cafeteria areas if ash trays and receptacles are available and are used properly.

All injuries occurring on University property must be reported immediately to one of the offices of the Student Health Service.

IDENTIFICATION CARDS

Each student of the University is required to possess an official identification

card and to present this card when attending University functions or when requested to do so by administrators, faculty, and campus police. Students are required to surrender their identification cards at the time they withdraw from the University or upon notification of dismissal. Freshmen and transfer students who enter the University at the beginning of the fall semester may secure their identification cards during the period established for freshman orientation. Students entering the University at the beginning of the spring semester will be notified concerning the schedule for issuing identification cards. A student who has lost his or her identification card should report this fact to the Office of the Dean of Students, Cumnock Hall, North Campus, as soon as possible and should make arrangements at this time for securing a replacement. A fee of \$2.00 is charged for issuing a second identification card.

REQUIRED NOTIFICATION OF CHANGES OF STUDENT STATUS AND ADDRESS

All changes in student records (including changes of academic programs, course registrations, official name, address, and telephone number) must be made through the Office of the Registrar, Southwick Hall, (North Campus). Notification of other offices of the University does not constitute official notification unless also made with the Registrar.

STUDENT BEHAVIOR

Although the administration and faculty of the University subscribe to the view that students have the right of self-determination over their private lives and public conduct off-campus and accordingly refrain from regulating the extra-campus behavior of students, they expect that every student upon enrolling in the University will comply with University rules and regulations. The expectation is that each student will put forth a genuine effort academically and will disavow such academic offenses as cheating, plagiarism, misuse of equipment, damage to University property, and interference with the rights of administrative officers and staff, faculty members, and other students to use University facilities. (Cf. "Academic Policies: Administrative Dismissal from the University" for policies concerning academic expulsion.)

In connection with any act of student misconduct involving moral turpitude, serious personal injury or property damage, which acts also constitute a violation of State or Federal criminal law, complaint shall be made to the appropriate prosecutor, and no effort will be made to substitute administrative punishment for appropriate criminal prosecution. Charges to replace or repair property of the University which has been stolen or damaged will be levied against offending students. Students who violate parking regulations are subject to municipal court processes and fines.



STUDENT DISCIPLINARY PROCEDURES

The underlying purpose of student disciplinary procedures is educational. Such procedures accordingly seek to promote the achievement of self-discipline and self-direction on the part of the student by fostering personal responsibility and accountability. In the administration of these procedures, the University recognizes the legitimate concern of the student body, the faculty, and the administration and is committed to a proper balance between protection for the individual and the academic community. In the imposition of disciplinary penalties, the University makes every effort to avoid dual punishment of an offender for the same wrongful act and therefore refrains from disciplinary action when sufficient disposition of an offense has been made, or appears likely to be made, by a court of law. Unlawful acts and acts of misconduct which are committed off-campus* are not the responsibility of the University and are not subject to adjudication by student disciplinary procedures.

The Role of the Dean of Students

Except for charges of academic dishonesty, which are adjudicated through established procedures of colleges, all complaints concerning student misconduct or charges concerning violation of administrative requirements of the University must be forwarded in writing to the Dean of Students, who, within a reasonable time thereafter, shall provide the student with the name of the complainant, a copy of the charges filed, and a statement of hearing

*Fraternities and sororities may request the assistance of the Dean of Students in matters which they cannot handle themselves.

procedures and individual rights of due process. Within five academic days of this notification, the Dean of Students shall schedule a personal interview with the student, at which time the student may explain the circumstances of the complaint or charge and/or may affirm or deny the charges or complaint as filed, may call witnesses on his or her behalf, and may confront and question those who appear to give testimony. Within a week of this interview, the Dean of Students shall render a decision concerning the complaint or charge filed and shall forward a copy of his decision to the student by registered letter, return receipt requested. In the event that the Dean has specified a sanction, his letter shall notify the student of his or her right to appeal the decision to a Board of Appeals and to be represented and/or assisted by a faculty advisor in making such an appeal.

The Dean of Students shall have authority to impose a sanction without recourse by the student to subsequent hearings if the student has failed to report for a personal interview as scheduled and has not been excused from reporting for good and sufficient reason. If a student against whom a sanction has been imposed makes no appeal to a Board of Appeals, the punishment determined by the Dean of Students shall be implemented within ten days. Pending action on an appeal of sanction imposed by the Dean of Students, the status of a student shall not be altered and his or her right to be present on campus and to attend classes shall not be suspended unless, in the opinion of the Dean of Students and the Vice President for Student Affairs, failure to implement such sanction may reasonably pose a threat to the safety of persons or the protection of University property.

The Composition and Role of the Board of Appeals

The Board of Appeals shall consist of two faculty members appointed by the Chairperson of the Faculty, two administration members appointed by the Vice-President for Student Affairs, and three student members appointed by majority vote of the Student Senate. An alternate shall be appointed respectively by the Chairperson of the Faculty, the Vice-President for Student Affairs, and the Student Senate for each regular member designated. Upon written notification to the Board at least two days prior to a scheduled hearing, the student defendant or the Dean of Students has the right to remove, without cause, one regular member of the Board and to replace such member with his or her designated alternate. The Board shall elect a person from among its members who shall conduct the hearing and who shall assume responsibility for assuring an accurate record of the hearing.

An official record of the hearing, including a record of testimony, shall be made by a duly appointed stenographer or by tape recorder. The transcript or tape recording shall be for the use of the Board only, and upon the conclusion of the hearing it shall be deposited with the Vice-President of Student Affairs, who shall subsequently release this record only upon the direction of the President or upon the order of a court of competent jurisdiction. Upon the student's graduation or withdrawal from the University, a copy of the official record of the student's hearing may be released to the student when such release has been approved by the University President. The original transcript will be kept in the Office of the Vice-President for Student Affairs.

The Board of Appeals shall receive a written charge from the Dean of Students which provides the name of the accused student and the specific allegation of student misconduct. A copy of such charge shall be conveyed to the student by the Board, together with a notice of time and place of official hearing before the Board. The student may be assisted in his or her defense by an advisor of his or her choice, may present evidence, and may call witnesses in his or her defense. Hearings before the Board of Appeals shall be private unless the student has filed a written request for a public hearing with the Board at least two days prior to the scheduled hearing date.

Attendance at Hearings of the Board of Appeals

The following individuals shall have a right to be in attendance at a hearing of the Board of Appeals: the Dean of Students, the student defendant, the student's advisor, and the legal counsel of the Board of Trustees. Individuals other than those enumerated above who have a

direct interest in the proceedings may be permitted to attend hearings at the discretion of the Board. The Board may revoke such permission at any time during the course of a hearing. A decision to permit an individual's attendance or to revoke such permission shall require a 5/7 affirmative vote of the Board.

Admissibility of Evidence

Decisions of the Board of Appeals shall be based solely upon evidence which has been introduced during official Board hearings. Improperly acquired evidence shall not be admitted before the Board. In any proceeding, the admissibility of evidence shall be governed by the Rules of Evidence which are specified by Chapter 30 A of the General Laws (State Administrative Procedure Act) concerning adjudication. Information pertaining to the defendant's academic standing or to his or her previous record of offenses shall be introduced in a hearing only if the Board deems such information to be relevant. Each witness testifying during a Board hearing shall be called into the hearing room at the time he or she is to testify and shall leave the hearing room immediately after providing testimony. Members of the Board, the student defendant, the defendant's advisor, and the Dean of Students may question any witness concerning his or her testimony.

Powers of the Board of Appeals

The legal counsel for the Board of Trustees shall be the legal advisor to the Board of Appeals. All questions as to the scope of the hearing, legal procedures, legal substance or legal relevancy shall be determined by Board counsel. By an affirmative vote of 5/7, the Board of Appeals may over-ride a decision of legal counsel. Following a review of evidence at the conclusion of a hearing, the Board of Appeals by an affirmative vote of 5/7 may affirm, reverse, increase, or decrease a sanction which has been imposed by the Dean of Students. Upon the conclusion of each hearing, the Board shall forward a written statement of its decision, signed by all Board members, to the President of the University, the student defendant, and the Dean of Students. All decisions of the Board of Appeals shall be implemented on the third academic day (including summer sessions) following the date of Board notification to the student defendant unless the Dean of Students or the student defendant notifies the Board in writing of his or her decision to appeal the Board's decision to the President of the University.

Appeal to the President of the University

An appeal to the President may be initiated by the Dean of Students or the student defendant and must be made in writing to the Vice-President for Student Affairs within two academic days following notification by the Board of Appeals. The President's review shall be based on the complaint, the decision of the Dean of Students, the record of the hearing, and the decision of the Board of Appeals. The decision of the President shall be implemented within ten days following the date of presidential notification to the student defendant unless the student defendant notifies the President in writing of his or her decision to appeal the President's decision to the Student Affairs Committee of the Board of Trustees. In the event that the President alters the decision rendered by the Board of Appeals, he shall provide a written statement of his decision, together with his reasons, to the Board of Appeals.

Appeal to the Board of Trustees

A student defendant has the right to appeal the decision of the President to the Student Affairs Committee of the Board of Trustees. This appeal must be made in writing to the Vice-President for Student Affairs within two academic days following the date of presidential notification to the student defendant. All decisions of the Student Affairs Committee of the Board of Trustees are final and shall be implemented within ten days.



STUDENT SERVICES

Student Personnel Services comprise a number of offices with primary concern for the general welfare of all University students, as well as special services and programs which are conducted by the faculty and administrative staff for the enrichment and well-being of student constituencies and for the protection of individual rights.

ALTERNATIVES FOR INDIVIDUAL DEVELOPMENT (AID)

Alternatives for Individual Development provides special programs in skill development and supportive services for students from various racial backgrounds in disadvantaged environments, including, but not limited to, minority students. The Office of AID administers two related programs of assistance. The regular program, for matriculating students and applicants who are admitted to the University as matriculating students, provides on-going counselling, tutoring, cultural enrichment, classes in reading and writing techniques, and limited financial aid. Individuals who qualify for this program and who are newly admitted to the University are also given the opportunity to participate in a precollege refresher program which is offered during the summer. A related program, the Educational Opportunities Program, provides qualifying individuals from disadvantaged environments with an alternative means for securing matriculation status through an earned admissions process and is described elsewhere in this publication under the heading "Admission Policies: Educational Opportunities Program." Individuals who are granted provisional, non-matriculated status in this program must achieve regular matriculation status no later than their fourth semester of enrollment.

CAMPUS SECURITY

The Campus Security Force is responsible for the security of University property, students, and employees and for parking control. Guards are assigned to parking control duties during the day and patrol of residence hall areas at night. *Student ID cards or other means of identification must be shown upon request to any properly identified member of the security force.* The policies of the Campus Security Force are governed by applicable federal, state, and local laws and by regulations of the Board of Trustees. In addition, members of the Campus Security Force are guided by a code of ethics adopted by the International Association of College and University Security Directors.

COUNSELLING

Special counselling and academic advising are provided as follows:

Academic Advising	Faculty Advisors, Department Offices; Counselling Staff, Concordia Hall
Career Counselling	Counselling Staff, Concordia Hall
Foreign & Minority Student Advising	Dr. Forbes Madzongwe, Cumnock Hall
Personal Development & Psychotherapy	Counselling Staff, Concordia Hall

Pre-Law and Graduate School
Advising
Pre-Medical and Pre-Dental
Advising
Veterans Counselling

Mr. Leonard Andrusaitis,
Department of Mathematics
Dr. David Eberiel, Department of
Biological Sciences
Veterans Office, Pasteur Hall

Student Advising

Student problems of a non-medical and non-psychological nature are handled by the Office of the Dean of Students and faculty advisors. The University recognizes that collegiate work is often done under conditions of stress, and faculty members often make themselves available for student conferences should a student so request.

Veterans Counselling

Veterans Counselling is provided by representatives of the Veterans Administration, who are located in Room 203A, Pasteur Hall (North Campus). Counselling concerning all aspects of V.A. benefits is provided.

Counselling Center

The University Counselling Center is located in Concordia Hall (South Campus) and provides a variety of academic and personal development resources free-of-charge to students. The Service offers counselling and psychotherapy for personal difficulties and interpersonal problems which interfere with or hamper academic and personal growth, psychological and vocational testing, help in understanding and sorting out problems with faculty or administrative requirements, and opportunities for self-understanding and interpersonal support. Workshops for the development of study skills and the management of anxiety, particularly anxiety which interferes with test-taking, are offered each semester. Such self-development experiences as support groups for women returning to college, the development of appropriate assertive skills, negotiating and resolving interpersonal relationships, and dealing constructively with loss and change are also provided.

Within the Counselling Service, specialized career-development resources and experiences are provided: individual career counselling, career exploration workshops, workshops for undeclared students or students considering a change of major field, and individual programs conducted in conjunction with various academic departments. A career resource library is available for the purpose of providing assistance to students who wish to explore career patterns and options, to identify entry-level positions, and to become aware of projections of employment possibilities. The Counselling Center is open from 9:00 to 5:00 each day, and at other times by appointment. An auxiliary office in Room 409, Fox Hall (North Campus), is used as needed. Students may drop by the Center in Concordia Hall at any time or call for an appointment on Extension 390.

DISABLED AND HANDICAPPED STUDENTS

The University is becoming increasingly more accessible to academically qual-

ified students who are physically disabled. Although some architectural barriers still remain, many disabled persons can traverse the campus with minimum difficulty. University Libraries, the Student Unions, Eames Hall, and the more recently constructed classroom buildings are accessible to students in wheel chairs. Early registration, preferential scheduling, housing assistance, a reader's directory for the blind, alternative testing procedures (e.g., verbal rather than written examinations for the blind or manually impaired), and special parking arrangements are some of the special services rendered to disabled students. Since admission to the University is based entirely on the academic qualifications of the applicant, admission procedures remain the same for all applicants, regardless of disability. For further information, contact the Office of Student Affairs, Cumnock Hall (North Campus).

EQUAL OPPORTUNITY/AFFIRMATIVE ACTION AND TITLE IX

Federal and State laws require that no student be discriminated against on the basis of age, national origin, race, religion, sex, or handicapped, marital, or veteran's status. The Affirmative Action Office, which has the overall responsibility for the implementation of Equal Opportunity/Affirmative Action, is located on the first floor of the Alumni/Lydon Library (North Campus). This office deals not only with discrimination complaints but also with the monitoring of actual practice and written policies and procedures, e.g. student activities, course offerings, teacher and student attitudes. Any student who believes that he or she has been discriminated against or who believes that the University in any of its aspects is operating in a manner which adversely affects female, handicapped, and minorities students, or veterans should contact the Affirmative Action Office immediately.



HEALTH SERVICES

The University maintains health service facilities on both campuses for the convenience of students. The Health Service Office on the North Campus is located at 30 Standish Street and is staffed by two registered nurses from 8:00am to 5:00pm, Monday through Friday. The Health Service Office on the South Campus is located in Mahoney Hall and is staffed by one registered nurse from 7:00am to 3:00pm, Monday through Friday. A physician is available at the North Campus Health Facility on a part-time basis. In case of emergency, however, medical care is available on a 24 hour basis at the three local hospitals.

All students are required to have on file with the Health Services Office an up-to-date physical examination and medical history form and a medical release form. Students who maintain health insurance are required to file proof of such insurance with the Health Services.

The University Health Service and the University are not responsible for students who become ill while on campus or who are injured while participating in class activities, university sports, or extra-curricular activities. Student accident insurance coverage for the academic year is obligatory and is included in the Student Activities Fee. Medical and surgical insurance, which is optional, is available at a nominal fee at the time of registration in September. Insurance claim forms may be obtained at both campus health offices and it is the responsibility of the student to complete these forms as soon as possible after an illness or accident. Failure to comply within the compulsory reporting period may result in the forfeiting of insurance claims. Hospitalization and medical treatment are obtained for a minor student only upon permission of the student's parents or guardians and at their expense. Emancipated students must assume responsibility for necessary hospitalization and medical treatment.

Any student, faculty, or employee incurring an injury at the University must report immediately to the Health Service for treatment. If the injury is sufficiently serious to warrant further medical attention, the nurse on duty shall make an appointment with a physician of the patient's choosing. It should be understood, however, that if it is necessary for the injured to be treated by a physician, the injured person, if not an employee of the Commonwealth, must assume the responsibility for payment of the physician's fee. In addition to caring for the injury, the nurse on duty shall also file a copy of the accident report with the Safety Committee.

MAIL BOXES AND POSTAL SERVICES

Student mailrooms are operated by the University of Lowell Associates, Inc., for the convenience of students. On the North Campus, the mailroom is located on the second floor of Southwick Hall. The South Campus mailroom is located in the basement of Mahoney Hall. Each student is assigned a mailbox during registration. Since incoming mail, administration notices, and faculty communications are placed in student mailboxes daily, *students are required to check their mailboxes daily*. Mailroom facilities are made available to clubs and organizations for the purpose of distributing notices and advertisements, pro-

viding that such distribution is made by club personnel rather than by mailroom employees. Mailroom hours on both campuses are from 8:30 am to 12:00 noon and from 1:00 pm to 4:30 pm. The Mailroom will not receive items for distribution after 4:00 pm.

ORIENTATION

An orientation program is held each summer for incoming freshmen and transfer students. During the orientation period, students are familiarized with campus facilities, are helped in registering for courses for the fall semester, are provided with mailboxes and identification cards, and are administered a swimming test. Social activities are held throughout the orientation program for the enjoyment and enrichment of the future University student. Details concerning the orientation program are supplied to the incoming student by the Office of Admissions in conjunction with official admission correspondence.

PLACEMENT SERVICES

University Placement Services include dissemination of vocational information and career interviewing services. The Office advises students on employment opportunities and arranges for employers, representatives from business, industry, government, hospitals, schools, and other areas to visit the campus during the year to interview prospective graduates. A basic resource library in the Office provides occupational information, industrial literature, graduate school information, and self-help career aids. The credentialing service provided by the Office affords a place for each student to establish and maintain an up-to-date file of personal records, a developmental resume, letters of recommendation, and other supportive documentation. Copies of student credentials are sent to prospective employers upon their request or when initiated by the candidate.

Activities conducted by the University Placement Services include the following: letter writing clinic, resume writing clinic, salary negotiations, travel-business etiquette success seminar, full and part time job placement, graduate placement, company and agency personnel planning, business agency tours, and guest speaking services.

The Placement Office also provides information concerning teacher certification requirements for students who plan to teach in the public schools. However, students enrolled in an approved program of teacher education should inquire at the Office of the Dean, College of Education, concerning certification procedures.

General Policies Concerning Placement Credentials

1. Upon registering with the Placement Office, each senior receives appropriate forms which he or she must complete for his or her placement file and supplies the Placement Office with the names of three faculty members who have agreed to write letters of recommendation for forwarding to prospective employers or to graduate schools. Recommendation forms are sent directly to specified faculty members. For each recommendation desired,

the registrant must complete a form which indicates the purpose of the requested recommendation (i.e. graduate study or job placement) and specifies the subject area of graduate study or the nature of the employment sought. In order to assist faculty members in focusing their letters of recommendation, this form will be sent to designated members of the faculty at the time when recommendation forms are forwarded from the Placement Office.

2. The Placement Office will not honor requests of registrants to reveal the contents of confidential letters of recommendation or evaluation reports which are on file and for which the student has waived his or her right to inspect. Registrants may request faculty members to make known their recommendations and evaluations prior to submission to the Placement Office. Since a faculty member is free to refuse such a request for disclosure as a condition for writing a letter of recommendation, the registrant should decide if he or she will require disclosure prior to asking a faculty member for a letter of recommendation. Students should report to the Placement Office only the names of faculty members who have their confidence and who have agreed to any disclosure which they may require. In the event that a registrant wishes to have a recommendation or evaluation removed from his or her placement file, the registrant should notify the placement secretary in writing. A recommendation or evaluation which has been removed from an individual's file upon his or her written request will be returned directly to the author or will be destroyed in the event that the author is no longer an employee of the University.
3. Placement papers will be sent only to bona fide employers at their professional or business addresses or to recognized admission officers of colleges and universities.
4. Any attempt by a registrant to gain access to his or her confidential placement papers through fraudulent means will result in automatic cancellation of placement privileges. In the event of such cancellation, all confidential letters will be returned to authors (or will be destroyed) and non-confidential materials will be returned to the registrant.
5. Until such time as a registrant revokes his or her authorization in writing, an individual's signature on documents filed with the Placement Office shall be considered as written authorization to forward all documents which comprise his or her complete placement file to any bona fide employer or recognized admission officer.

RIGHT OF ACCESS TO STUDENT RECORDS

The Family Rights and Privacy Act of 1974 grants any student in attendance, or former student, the right of access to inspect or review his or her educational files, records, or data. Students who wish to inspect their records must file a "Right of Access" form with the office or department in which the desired record is kept. Right of Access forms are available in the Office of Student Affairs. Within ten days of receipt of the Right of Access form, the office or department will notify the student as to the date, time, and location when the desired record will be available for inspection.

The University maintains the following general records on students:

Admission File	Admissions Office, Dugan Hall, South Campus
Permanent Academic Records	Registrar's Office, Southwick Hall, North Campus
Financial Aid Records	Financial Aid Office, Dugan Hall, South Campus
Health Records	Health Services, Mahoney Hall, South Campus Health Services Building, North Campus
Temporary Academic Records	College Dean, Department Chairperson, or Faculty Advisor
Account and Payment Records	Business Office, Dugan Hall, South Campus

The file of each student must contain a record of all non-University affiliated individuals or organizations requesting access to it plus statements which specify the legitimate educational purposes for which access was requested. The Record of Access may be released only to University personnel or to state or federal officials as a means for auditing the reporting of access to student records.

Information or records concerning individual students may not be released to any individual or agency without written permission of the student. Any request for such information received without such written notice will not be honored and will be returned with a request for a written release by the student.

Educational records may be released without permission to the following individuals or agencies under the following specific conditions:

1. Personnel of the University, i.e. faculty, administrators or staff for legitimate educational interest only;
2. Officials of other institutions in which the student is enrolled provided that the student is notified of the release;
3. Federal or state officials in connection with the audit and evaluation of federally funded programs or in connection with the enforcement of federal legal requirements which relate to such programs or in connection with the student's application for or receipt of financial aid;
4. State and local officials pursuant to any state statute adopted prior to November 19, 1974;
5. Organizations conducting studies for the purpose of developing predictive tests, administering student aid programs and improving instruction;
6. Accrediting organizations in order to carry out their accrediting functions;
7. Parents who claim the student as a dependent on their IRS statement; and
8. When necessary in an emergency, to protect the health, safety or welfare of the student or others, to persons who are in a position to deal with the emergency.

The following data is considered informational in nature and may be released, without permission of the student, at the discretion of the University: name, address, telephone listing, date and place of birth, participation in officially recognized activities and sports, height and weight of athletic team members, dates of attendance, degrees and awards received, and most recent previous educational institution attended. Any student who believes that his or her records are inaccurate or misleading may request a hearing with the Office of Student Affairs to discuss the contents of such records. Additional information on procedures or policies relating to University compliance with the Family Rights and Privacy Act can be obtained from the Office of Student Affairs.

CAMPUS TRANSPORTATION

Regular bus service is provided free-of-charge during the fall and spring semesters between campuses and the dormitory complex on the North Campus. Bus stops for this shuttle service are located in front of Lydon Library (North Campus) and the Student Union buildings (North Campus and South Campus). Schedules of service are published each semester in the *Connector* and are available in the Office of Student Affairs, Cumnock Hall (North Campus), the Office of Admissions, Dugan Hall (South Campus), and in University mail rooms.

UNIVERSITY BOOKSTORE

The University Bookstore is operated by the University of Lowell Associates, Inc. The North Campus bookstore is located on the second floor of Southwick Hall. The bookstore for the South Campus is located on the ground floor of the Student Union Building. All required textbooks (as well as instructional supplies, drafting equipment, calculators, art supplies, teaching aids, and general and technical reference books) are carried in both stores. A large selection of paperback books, including new and standard titles, are also stocked. The store sells campus wear, greeting cards, posters, records, toiletries, magazines, novelties, and such University-oriented merchandise as pewter and ceramic mugs, jewelry, and decals.

The University Bookstore encourages fraternities, clubs, and other organizations which may desire specialty or novelty items to place special orders. Textbooks and items over \$1.00 are discounted at 5%. As part of its service to students, the University Bookstore purchases used textbooks twice a year during examination periods and will special order any book not in stock. University caps and gowns are ordered through the Bookstore by graduating seniors.



COMMUNITY SERVICES

Banking Services

Although the University is currently negotiating for a campus branch of a local bank, no banking service is presently located on University property. However, many bank offices are within walking distance of both North and South Campuses. Resident students are encouraged to initiate checking accounts in local banks for the purpose of facilitating the cashing of checks. The bank office which is closest to the South Campus is the Union National Bank, Highland Branch, 163 Pine Street. Banks which are within walking distance from the North Campus are the Bay Bank Middlesex, 80 Mammoth Road; the Cooperative Bank, 10 Hurd Street; the First Federal Bank, 15 Hurd Street; the Lowell Savings Bank, 34 John Street; the Union National Bank, 61 Merrimack Street; and the Lowell Bank and Trust, 489 Merrimack Street.

Public Transportation

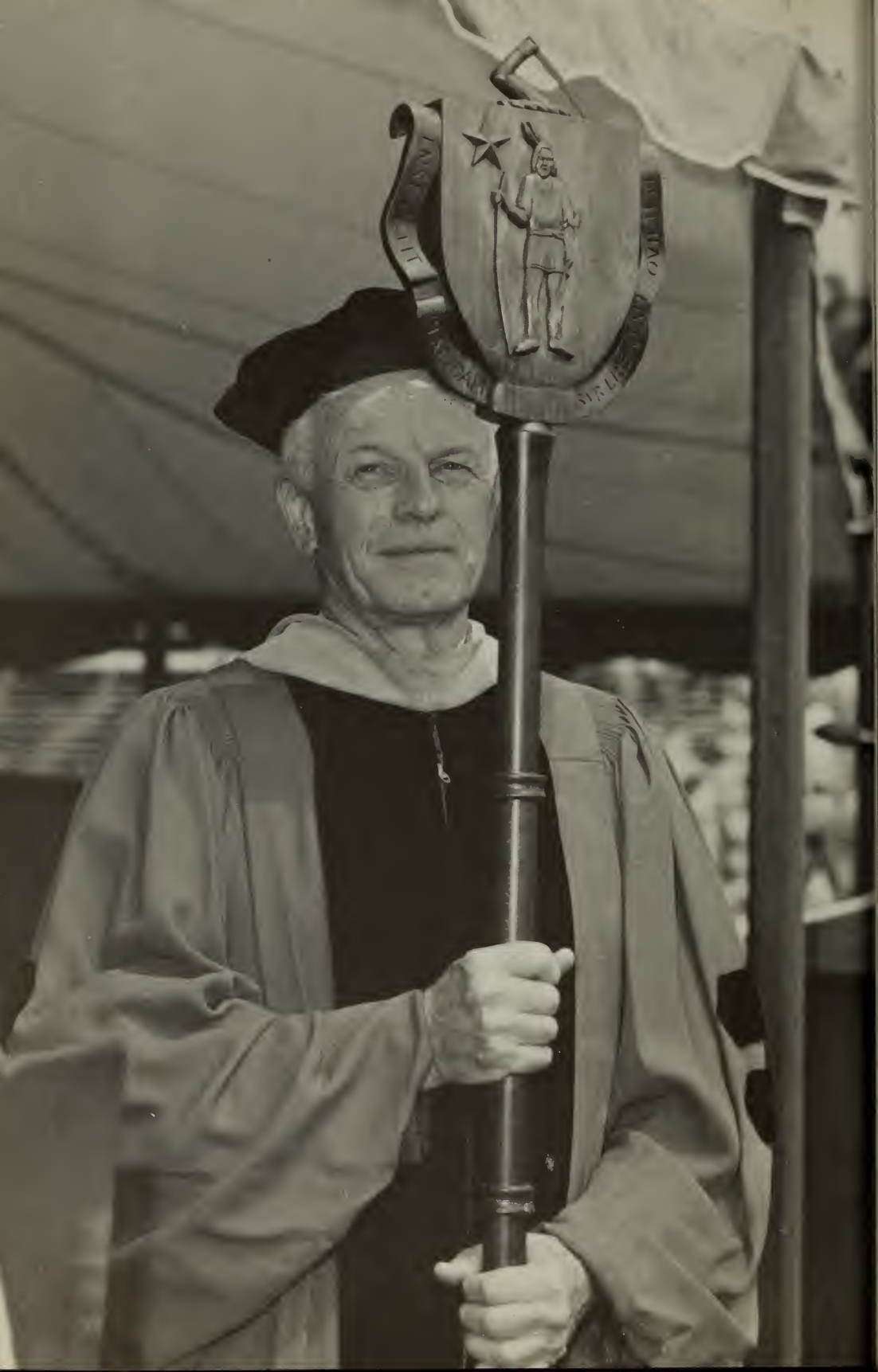
Transportation to and from downtown Lowell is provided by the Lowell Transit Authority. The South Campus bus stop is located on the corner of Wilder and Broadway Streets. On the North Campus, bus stops are located in front of Smith and Eames Halls and on the VFW Highway. Students who desire more specific information concerning local bus schedules should call 851-4553.

Transportation to Boston from downtown Lowell is provided on a regular basis by the Massachusetts Bay Transportation Authority. Schedules and other information can be obtained by calling 692-3131. Train service from Boston is provided seventeen times daily between the hours of 6:35 AM and 11:59 PM. Service to Boston is provided seventeen times daily between the hours of 5:42 AM and 10:25 PM. Saturday and holiday service is provided less frequently. Schedules and other information can be obtained at the railroad station on Thorndike Street, a fifteen minute walk from both campuses, or by calling 455-5613.

Bus service to New Hampshire is provided by Continental Trailways and Vermont Transit. A modern bus terminal is located on Industrial Avenue, a twenty minute walk from the South Campus. Schedules and other information can be obtained at the bus station or by calling 459-7101.

Public & Private Assistance Groups

Action Hotline	263-8777	Listening Post	738-0486
Alcoholics Anonymous	454-3243	Lynn Hotline	599-8020
Belmont Hotline	484-9224	Mass PIRG	423-1796
Community Teamwork		Melrose Hotline	662-7350
Small Claims Court	282-3075	Office of Consumer Affairs	727-8000
Advisory Service	287-1900	Project Rap	922-0000
Department of Public Health	851-7261	Watertown Hotline-Helpline	926-3600
Food Stamps	453-1791	Woburn Workshop Hotline	933-3336
Drugs & Personal Help	486-3130	Worcester Crisis Center	791-6562



UNIVERSITY ACADEMIC POLICIES

Each University student is subject to two sets of academic regulations — those of the University as a whole, which are cited below, and the academic rules of the college and program in which he or she is enrolled. The academic rules of colleges and programs are listed in chapters devoted to college programs.

BACCALAUREATE DEGREES

Undergraduate programs which are offered by the University of Lowell lead to one of the following degrees: Bachelor of Arts, Bachelor of Science, Bachelor of Music, Bachelor of Science in Business Administration, Bachelor of Science in Industrial Management, Bachelor of Science in Engineering, and Bachelor of Science in Technology.

Bachelor of Arts Degree

Curricula leading to the Bachelor of Arts degree are designed to provide a broad, comprehensive education with many options for developing major and minor programs. These options are specified by each of the colleges offering Bachelor of Arts degree programs and are sufficiently flexible to satisfy the individual needs of students while also providing sufficient preparation in the major field for subsequent specialization at the graduate level or for state certification of public-school teachers. All Bachelor of Arts degree programs require completion of a major within the college in which the student is a degree candidate and (except as specified by policies concerning second majors) a minimum of 75 credits outside the major field. The following is a listing of major fields in which the Bachelor of Arts degree is presently offered.

College of Education	College of Liberal Arts
Elementary Education	American Studies
Secondary Education	Art
College of Management Science	English
Economics	French
College of Music	History
Music	Modern Languages
College of Pure and Applied Sciences	Philosophy
Chemistry	Political Science
Environmental Sciences	Psychology
	Sociology
	Spanish

Bachelor of Science Degree

The Bachelor of Science degree is designed to provide students with a broad scientific education with specialized training in one or more of the basic sciences (e.g., biological sciences, mathematics, meteorology, etc.) or to combine a general education with a specialized applied program (e.g., health education, nursing, the administration of law & justice, etc.). Curricula which are offered in areas of the pure and applied sciences and mathematics provide opportunities for major and minor program options but afford greater opportunities for major specialization than are permitted in comparable Bachelor of Arts curricula. All Bachelor of Science degree programs require completion of a major within the college in which the student is a degree candidate and a minimum of 50 credits

outside the major field. The following is a listing of major fields in which the Bachelor of Science degree is presently offered.

College of Health Professions
Health Education
Health Services Administration
Medical Technology
Nursing
Physical Therapy

College of Liberal Arts
Administration of Law & Justice

College of Pure and Applied Sciences
Biological Sciences
Chemistry
Environmental Sciences +
Mathematics*
Meteorology
Physics#
Radiological Health Physics
+Geology option available
*Options available in Applied or Pure
Mathematics, Computer Sciences, and
Mathematical Statistics
#Options available in Optics and
Applied Physics

Other Baccalaureate Degrees

Bachelor of Music, Bachelor of Science in Business Administration, Bachelor of Science in Industrial Management, Bachelor of Science in Engineering, and Bachelor of Science in Technology degree programs have been determined by the requirements of specific career objectives and are subject to the recommendations of such professional associations as the National Association of Schools of Music and the Engineers Council for Professional Development. Course requirements for these professional degree programs are specified in terms of the total course of study and without reference to academic options which are available to students under Bachelor of Arts and Bachelor of Science degree programs.

GENERAL DEGREE REQUIREMENTS

To qualify for University degrees, baccalaureate candidates are required to obtain 2.00 ("C") averages in their total courses of study, to present a minimum of 120 semester credits (exclusive of credits earned in fulfilling the Physical Activities Requirement), to fulfill the minimum residency requirement which is designated for University day courses and each major, to satisfy the regulations and academic standards of the colleges which exercise jurisdiction over the degrees for which they are matriculating, to complete all curriculum requirements specified by the college in which they are enrolled and by the department(s) in which they are majoring, and to complete the following University Core Requirements of 35 semester credits.

University Core Requirements

The University Core Requirements consist of a Physical Activities Requirement (*course credits of which do not apply to the minimum degree requirement*), an English Composition Requirement, and Area Distribution Requirements.

Physical Activities Requirement (2 semester credits)

All students must successfully complete one year of supervised physical activity. Students who fail to satisfy the requirement of the physical activities program by the end of the freshman year must repeat failed courses until such time as they have passed them. Grades for physical activities courses are awarded on a

“pass-no credit” basis (“P” or “NC”) and are not computed in cumulative averages. Students who have not passed the physical activities requirement by the end of their senior year are advised that graduation will be denied until such time as the requirement is satisfied. Students who are veterans may at their option be excused from the physical activities requirement. Students who are physically unable to participate in strenuous exercise may be excused from the activity requirement upon written confirmation of their condition by a physician.

English Composition Requirement (6 semester credits)

All students must pass a sequence of two courses totaling six semester credits in English Composition (normally to be taken during the freshman year) unless they are specifically exempted in whole or in part by the English Department on the basis of a written proficiency examination.

Area Distribution Requirements (27 semester credits)

All students must select and pass a minimum of nine courses and twenty-seven semester credits outside their major departments* in three basic areas of the liberal arts and sciences. A minimum of two courses and six semester credits must be presented in *each* of the three areas and an additional three courses and nine semester credits must be presented from *among* the Area Distribution Requirements. Students may not present more than three courses and nine semester credits from the offerings of any one department, may not present more than two courses and six semester credits from the offerings of the English Department, and may not present more than four courses and twelve semester credits in any one distribution area.

*Students pursuing double majors within the enumerated departmental areas are required to complete the Area Distribution Requirements outside *one* of their two major departments. However, such students may not present courses for a distribution requirement which may be elected for either of their major areas. For instance, a student who majors in English and Spanish may present other language or literature courses which are offered by the Department of Languages to satisfy the Area II Requirement but may not present English or Spanish courses.

Area I Behavioral and Social Sciences+

Economics, Geography (non-laboratory courses), History, Political Science, Psychology, and Sociology.

Area II Fine Arts and the Humanities#

Art, English (excluding 42-101 and 102), Languages, Music, and Philosophy

Area III Mathematics and the Sciences

Astronomy, Biology, Chemistry, Earth Sciences (Geography laboratory courses, Geology, Meteorology), Mathematics, and Physics

+59-203 & 59-204: TECHNOLOGY & HUMAN VALUES I & II may be presented for the Area I Distribution Requirement.

#59-201 & 59-202: WESTERN CULTURAL HERITAGE I & II may be presented for the Area II Distribution Requirement.

Residency Requirements

All baccalaureate degree candidates must satisfy both general and major field residency requirements.

General Residency Requirements

All candidates for regular (non-continuing education) baccalaureate degrees must complete 60 semester credits at the University of Lowell, 30 of which must be earned through full-time study in University day courses.* The following residency options apply, as specified, to candidates for regular baccalaureate degrees:

1. Complete three years in the University, earning not less than 90 credits (30 of which must be earned through full-time study in University day classes), and an approved junior or senior year program at another accredited baccalaureate institution, earning not more than 30 semester credits or the number of semester credits which is specified for juniors or seniors by those prescribed courses of study which are listed in the applicable issue of the *Bulletin of Undergraduate Studies*;
2. Complete an associate degree in the Evening School of Continuing Education or, under the provisions of the Massachusetts Transfer Compact, in a Massachusetts Community College and the last two years in the University, earning not less than 60 credits (30 of which must be earned through full-time study in University day courses);
3. Complete up to the first two years in an accredited associate institution, earning not more than 60 semester credits (with grades of "C" or better), and the remaining years in the University, earning not less than 60 credits (30 of which must be earned through full time study in University day courses);
4. Complete up to the first three years of a baccalaureate program in an accredited four-year institution, earning not more than 90 semester credits (with grades of "C" or better), and the remaining year(s) in full time study in University day classes, earning not less than 30 credits; or
5. Complete up to the first three years of a baccalaureate program in the Evening School of Continuing Education and the remaining year(s) in full-time study in University day classes, earning not less than 30 credits.

The requirement of 30 semester credits of full-time study in University of Lowell day courses may not be satisfied through course equivalency procedures. However, residency requirements over and above this requirement may be satisfied subsequent to admission to the University through these procedures.* Upon the approval of the appropriate college dean, up to 15 credits of the minimum day course requirement also may be satisfied through completion of day courses in

*Students who matriculate part-time for degrees under provisions of the Second Chance Program for Adults must satisfy residency requirements in University day classes as specified (including the requirement for the major specified below) but may fulfill these requirements on either a full-time or part-time basis. An individual who has been admitted to day courses of the University as a non-matriculating student is not considered a student in residence and such an individual who is subsequently admitted as a matriculating student must petition the dean of the college to which he or she has been admitted for recognition of non-matriculated courses. Up to 15 credits of non-matriculated day courses may be recognized for application to the minimum residency requirements of 30 credits of University day courses.

+Cf. regulations which appear elsewhere in this publication under the heading "Course Equivalency Examinations." Note that specific restrictions apply to students who transfer to the University.

the University of Lowell Summer School. Students who are interested in petitioning for application of day courses of the University of Lowell Summer School to the minimum day class requirement must file an academic petition with the dean of the college to which they have been admitted as degree candidates prior to enrolling for Summer School courses.

Residency Requirement for Major Fields

Each baccalaureate degree candidate must complete at least 15 credits in regular class work within major departments of the University for each major which is presented for a degree. Upon the approval of the appropriate college dean, the course requirement of 15 credits within major departments for each major pursued may be satisfied through satisfactory completion of day courses in the University of Lowell Summer School. Students who are interested in petitioning for application of day courses of the University of Lowell Summer School to the 15 credit major requirement must file an academic petition with the dean of the college to which they have been admitted as degree candidates prior to enrolling for Summer School courses.

DUAL DEGREE PROGRAMS

Students who wish to pursue dual majors in more than one college and to complete all degree requirements for two different degrees may be permitted to establish simultaneous matriculation in two colleges and to designate candidacy for two degrees. The curricula for all dual-degree programs are approved as such by vote of participating college faculties and by concerned college deans and must be completed as prescribed. It is therefore imperative that a student who wishes to pursue an approved dual-degree program obtain a copy of the specified curriculum which enumerates the specific semester-by-semester course requirements. A student who may be interested in such a program should inquire at offices of college deans.

Students should consult the regulation concerning the declaration of a second major which appears elsewhere in this publication under the heading "Major Field Requirements" if (1) they wish to pursue a second major which leads to the same degree as that of their initial major or (2) they wish to pursue a second major which leads to a different degree than that of their initial major but do not wish to satisfy the non-major requirements for both degrees.

MAJOR FIELD REQUIREMENTS

Candidates for Bachelor of Arts and Bachelor of Science degrees must complete an academic major within the college in which their degrees will be granted. The requirements for majors are set by departments of the University or interdisciplinary committees but must specify a minimum of 30 credits and at least 15 credits at the upper-division course level (300 and 400 numbered courses).

Candidates for the Bachelor of Arts degree may not be required to take more than 45 credits in their major fields, but they may elect to take additional courses in the major beyond the specified maximum providing that such

additional courses are not presented for the minimum degree requirement of 120 credits. Accordingly, major credits which exceed the specified maximum will raise by an equal amount the number of minimum credits which are required for the Bachelor of Arts degree.

Candidates for the Bachelor of Science degree may not be required to take more than 60 credits in their major fields, but they may elect to take additional courses in the major beyond the specified maximum providing that such additional courses are not presented for the minimum degree requirement of 120 credits. Accordingly, major credits which exceed the specified maximum will raise by an equal amount the number of minimum credits which are required for the Bachelor of Science degree.

Declaration of Major

Students who have declared a major at the time of their admission to the University are officially enrolled in the college in which their designated major is offered and are referred by the college dean to the chairperson of their designated major for assignment of a faculty advisor. Although the University does not require students to declare their major fields until they have achieved 60 semester credits, an early decision by students will greatly facilitate the selection of appropriate prerequisite courses for major fields and accordingly will reduce the possibilities of time-consuming errors in judgment. Students enrolled in the College of Pure & Applied Sciences must declare their major fields by the end of the freshman year. Students contemplating majors in chemistry or environmental sciences should initiate prerequisite course work immediately upon entrance to the College of Pure & Applied Sciences and should make a declaration of major at this time or prior to the end of the freshman year. Students in the College of Liberal Arts who plan to apply for programs of the College of Education should not delay declaration of an academic major beyond the second semester of the freshman year. Students in the College of Health Professions should not delay declaration of major beyond the freshman year. Additional course work beyond the minimum degree requirement and extension of the normal four-year period of study may be expected when individuals make a declaration of major later than advised above.

Students who make no declaration of major prior to the end of their sophomore year are listed as undeclared students for their first two years. Individuals who wish to designate a major which is offered by the college in which they are enrolled as undeclared students must secure the signature of the appropriate department chairperson (or the chairperson of the committee which exercises jurisdiction over an interdepartmental major) on a declaration of major form and must file the completed form with the Office of the Registrar. Individuals who wish to designate a major which is not offered by the college in which they are enrolled as undeclared students must file an approved form for intercollegiate transfer and declaration of major with the Office of the Registrar. This form requires the signatures of the dean of the college to which the student transfers and the appropriate department chairperson.

Undeclared students are advised that openings may be limited or unavailable in some programs and that differential admissions criteria may be applied to program or college applicants when staffing or facilities render it necessary to establish limitations upon enrollments. Undeclared students may not apply for transfer to the College of Education, which requires the completion of specified lower-division courses in the major as one of several admission requirements.

Declaration of Second Major

Students who wish to declare a second major in an academic field should consult with the dean the college in which they are enrolled to ascertain if a second major in an academic field can be completed within specified degree requirements or will require additional study beyond the minimum degree requirements and extension of the regular period of baccalaureate study. Students who wish to declare a second major in the college in which they are enrolled as degree candidates ordinarily may do so by filing an approved declaration of second major with the Office of the Registrar. Students who wish to declare such a major in another college of the University may do so only when regulations of the college offering the desired major and the college in which they are enrolled as degree candidates both permit and upon the authorization of the dean of the college in which the desired major is offered. Students who are permitted to carry two majors are assigned an advisor in each major department.

Individuals who are matriculating for the Bachelor of Arts degree may not count more than 63 credits in the two academic majors combined toward the minimum degree requirement of 120 credits. Students who present more than 63 credits in the two majors combined may not present less than 57 semester credits outside the two major fields in satisfying the minimum degree requirement of 120 credits. Accordingly, students who present more than 63 credits in the two majors combined must present a number of credits beyond the minimum degree requirement of 120 credits which is equal to the number of credits by which they exceed the combined major credit maximum.

Students who elect academic majors in more than one college are candidates for one degree only unless they pursue an authorized dual degree program, and they are considered to be degree candidates in the college of their initial major unless they indicate to the contrary at the time they make a declaration of second major by filing for intercollegiate transfer. Accordingly, a student who pursues academic majors in two colleges is subject to all degree requirements as specified by the college of his or her initial academic major and is subject only to major course requirements (including collateral and prerequisite courses for the major) as specified by the department of his or her second academic major. Individuals who pursue majors which are offered within different degree requirements will receive the degree which is designated for their initial academic major unless they file for intercollegiate transfer at the time they file a declaration of second academic major.

Professional programs in business administration, education, engineering, health professions (health education, health-services administration, medical

technology, nursing, and physical therapy), industrial management, industrial technology, and music (Bachelor of Music programs) may be designated as degree majors only. Although students in these programs may be permitted to pursue a second major in an academic field which is offered by another college, they are subject to all degree requirements as specified by the college of the professional major.

Change of Major

Once students have begun a program of major studies, they may change their major field only by filing an approved change of major form with the Office of the Registrar. Students who make substantial changes in their plans of study after the beginning of the sophomore year, regardless of major, ordinarily will find it impossible to complete degree requirements within the normal four-year period of study and may also find it necessary to redesignate their choice of degree. Students who have been placed on academic warning should review their choice of major and should contemplate a change of program. Intercollegiate transfer is not permitted for students seeking probationary readmission, and a petition for such transfer may not be initiated following notification of suspension.

Change of Major within College of Enrollment

Students who wish to change their declarations of major within the college in which they are enrolled as degree candidates are required to file an approved change of major form with the Office of the Registrar. This form requires the approval of the chairperson of the major department to which the student desires to transfer and should be filed by November 1 for spring semester approval and by April 1 for fall semester approval in order to insure proper advisement during the periods designated for fall and spring preregistration. Filing after the recommended dates may be permitted by the chairperson of the department having jurisdiction over the new major.

Change of Major with Intercollegiate Transfer

Students desiring to transfer from a baccalaureate program of the Evening School of Continuing Education to a baccalaureate day program,* to transfer from a baccalaureate day program to a baccalaureate program of the Evening School of Continuing Education, or to drop a major which is offered by the college in which they are matriculating and to add a major which is offered by another college of the University must apply for intercollegiate transfer. Students who wish to pursue a professional program in elementary or secondary education must apply for transfer to the College of Education.

An individual seeking an intercollegiate transfer must file a petition, together with a transcript of his or her permanent record card, with the appropriate chairperson and dean having jurisdiction over the program to which transfer is

*Evening School students transferring to college programs should refer to policies under the heading "Residency Requirements" for specification of credits which must be completed in regular day classes.

desired. Following endorsement by both the chairperson and dean, this form must be filed with the Office of the Registrar by November 1 *for spring semester transfer and by April 1 for fall semester transfer*. Individuals petitioning for intercollegiate transfer are required to satisfy the admission requirements of their desired college and program and, irrespective of any favorable decision concerning such petition, they may not be permitted to transfer if they have been suspended from the University after they have been accepted for transfer.

Individuals seeking transfer from one college to another are advised that openings may be limited or unavailable in some programs, that differential admissions criteria may be applied to program or college applicants when staffing or facilities render it necessary to establish limitations upon enrollments, and that the completion of degree requirements within the customary four-year period may not be possible since the correction of deficiencies cannot always be accommodated within the schedule of course offerings.

The official date of intercollegiate transfer is the first day of the semester following approval of a student's transfer application. Since course preregistration is conducted prior to the official date of transfer, students should make immediate arrangements for pre-registration counselling with the dean of the college to which they will transfer. Subsequent to approval of a student's application for transfer and prior to the official date of transfer, the college dean shall review the academic record of the student to determine the applicability of previously completed courses to the requirements of the college and, if appropriate, the new major.

The dean shall provide the student and the Office of the Registrar with a listing of such courses and shall authorize their deletion from the student's cumulative grade-point average. Irrespective of grades received, all courses which may not be applied to minimum college or program requirements for degrees shall be deleted from the student's cumulative grade-point average. For example, nursing courses, curriculum & instruction courses, and apprentice teaching courses are not applicable to curricula of the College of Liberal Arts and a student who has completed such courses will have them deleted from his or her cumulative average upon transfer to the College of Liberal Arts. Students who subsequently transfer to another college within the University, or who return to the college from which they have previously transferred within the University, shall have their academic records again reviewed and appropriate courses shall be reinstated to the cumulative average and inappropriate courses shall be deleted. No student shall be permitted more than two intercollegiate transfers.*

*The initial admission of underclassmen to the College of Education shall not be counted for the purpose of this limitation.

MINOR AREA REQUIREMENTS

The requirements for minors are established by University departments or by interdisciplinary committees. No minor program may consist of less than 18 semester credits in the minor field nor more than 24 semester credits. At least 6 credits must be completed at the upper-division course level for all minor

studies. Students are advised that an aggregation of courses which total 18 or more credits does not constitute a minor field. Specific options for minor programs will depend on the major field which a student has elected to pursue and collateral course requirements which have been specified by major departments. Although minor programs generally may be elected without specific authorization of departments offering such programs, some minors do require such authorization. In any event, individuals who are interested in electing a minor program should consult the relevant section of this publication for curriculum requirements and prerequisites. Notation of a minor program is not made on the student's permanent record card until all degree requirements have been satisfied and the Office of the Registrar has been notified by the college in which the student has matriculated concerning the completion of minor programs.

LANGUAGE REQUIREMENT

Although the University does not require language proficiency as such for any degree, each faculty having jurisdiction over specialized program areas has the prerogative of specifying a level of language proficiency as a collateral requirement for major fields. Students who are required to evidence intermediate proficiency as a collateral requirement of their major studies and individuals who desire to present official evidence of language proficiency for purposes of employment or application to graduate schools may satisfy the expectations of the College of Liberal Arts for intermediate language proficiency through any one of the following options:

- a. a score of "550" or above on a College Entrance Examination Board Achievement Test;
- b. a score of "3" or above on a College Entrance Examination Board Advanced Placement Examination;
- c. a satisfactory score in a proficiency test prepared and administered by the Language Department of the University of Lowell (preferably during the student's freshman year) and covering a reading knowledge of any one of the following languages: French, German, Greek, Italian, Latin, or Spanish;
- d. passing two semester courses on the intermediate, second-year college level in a language previously studied in the secondary school and offered by the University of Lowell; or
- e. passing a minimum of 12 semester credits in one language, the study of which is initiated at the University of Lowell.

COOPERATIVE EDUCATION

The Cooperative Education Program integrates academic studies with productive work experience in business and industry and is available to all individuals whose major departments have agreed to permit their students to participate in an alternating schedule of study and work. Since students generally are placed in employment related to their academic fields of study, the Cooperative Education Program not only provides a source of income which may help students to defray their college expenses but also tends to make classroom work more immediately relevant by clarifying career goals through personal experiences.

Full participation in the Cooperative Education Program ordinarily implies extension of the normal period of baccalaureate study to five years, entails three alternated working periods (fall, spring, and summer) with participating employers, and requires individual commitment to a 40 hour work week during assigned working periods. A maximum of 3 credits per working period (up to a total of 9 credits) may be granted to participating students upon authorization of appropriate major departments. Depending upon departmental policies, these credits may satisfy unrestricted elective course requirements.

Group A: After Three Semesters Completed					
	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5
1ST SEMESTER	SEMESTER 1	SEMESTER 3	CO-OP II	SEMESTER 5	SEMESTER 7
2ND SEMESTER	SEMESTER 2	CO-OP I	SEMESTER 4	SEMESTER 6	SEMESTER 8
SUMMER	VACATION	VACATION	CO-OP III	VACATION	
Group B: After Four Semesters Completed					
	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5
1ST SEMESTER	SEMESTER 1	SEMESTER 3	SEMESTER 5	CO-OP III	SEMESTER 7
2ND SEMESTER	SEMESTER 2	SEMESTER 4	CO-OP II	SEMESTER 6	SEMESTER 8
SUMMER	VACATION	CO-OP I	VACATION	VACATION	
Group C: After Five Semesters Completed					
	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5
1ST SEMESTER	SEMESTER 1	SEMESTER 3	SEMESTER 5	CO-OP II	SEMESTER 7
2ND SEMESTER	SEMESTER 2	SEMESTER 4	CO-OP I	SEMESTER 6	SEMESTER 8
SUMMER	VACATION	VACATION	VACATION	CO-OP III	
Group D: After Six Semesters Completed					
	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5
1ST SEMESTER	SEMESTER 1	SEMESTER 3	SEMESTER 5	SEMESTER 7	CO-OP III
2ND SEMESTER	SEMESTER 2	SEMESTER 4	SEMESTER 6	CO-OP II	SEMESTER 8
SUMMER	VACATION	VACATION	CO-OP I	VACATION	

When on cooperative education assignment, a student remains registered at the University by means of required seminars and is required to pay student union and student activities fees. Additional information concerning the requirements for program participation may be secured from the Office of Cooperative Education.

UNDERGRADUATE CLASSIFICATION

Irrespective of the provisions of specific curricula and the number of full-time semesters completed by students, the Office of the Registrar determines class standing at the end of each semester on the basis of total credits earned (including physical activities and aerospace studies credits) and in accordance with the following scales:

Freshman standing	0-29 semester credits
Sophomore standing	30-59 semester credits
Junior standing	60-89 semester credits
Senior standing	90 or more semester credits (to graduation)

MAXIMUM PERIOD OF BACCALAUREATE STUDY

Depending upon the nature of the subject and discipline, courses taken by a student may become obsolete for curricula of the University when they have been completed over a period of time which exceeds the customary period for baccalaureate study. Accordingly, University departments reserve the right to delete courses from a student's program of study when such courses have been determined to be obsolete for the curriculum in which the student is enrolled.

Ten full-time semesters is the maximum period which is permitted for continuous University matriculation unless special permission for additional semester enrollment has been granted by the dean of the college in which a student is enrolled as a degree candidate. A student who fails to complete degree requirements within ten full-time semesters may be dropped from the University when instructional resources render it necessary to establish limitations upon enrollments.

PROGRAMS OF STUDY

All students are required to file with their advisors a copy of their final semester course registrations (including notification of course withdrawal) and an accurate account of courses taken, grades received, and changes of contemplated programs of study. Deadlines for conferring with faculty advisors concerning the completion of degree requirements and for filing final programs of study with college deans are specified by the University calendar.

Individuals who unofficially complete all degree requirements and fail to file for a degree must reapply for readmission through the Office of Admissions. Upon the payment of admission and graduation fees, such individuals may apply for degrees through their department chairpersons and college deans.

Each college has adopted a program of studies form which best reflects the nature of its degree programs. Forms which are employed by the College of Liberal Arts, the College of Education, and the College of Health Professions have been standardized and designate three areas: University Core Requirements, Major Requirements, and Collateral Programs (Second Majors, Minors, and Unrestricted Elective Courses).

Credits for each course may be counted only once in a student's program of studies form and may not be counted for more than one category of the program of studies. A course which is specified as a requirement for both a student's major and minor will satisfy both requirements, as stated, but such course credits may be counted for the major only. Irrespective of such overlapping courses, a minimum of 18 credits must be listed for each minor area designated. A course which is specified as a common prerequisite for several courses will satisfy all prerequisite requirements, as stated, but course credits may not be counted more than once and may be applied to one category of a student's program of studies only.

At the end of the semester following the filing of an approved program of study, the office of the college dean verifies course completions and required cumula-

tive and major averages. The names of students who have satisfied all degree requirements are then forwarded to the appropriate college faculty for endorsement and, finally, to the Board of Trustees, who officially confer degrees upon recommended individuals.

UNIVERSITY COMMENCEMENT

Graduation exercises are held once a year at the end of the spring semester. Undergraduates who have completed degree requirements during the previous fall semester and those individuals who anticipate completion of degree requirements during the spring semester and the following summer term are permitted to attend commencement exercises and their names are listed in the commencement booklet as unofficial candidates for degrees. An individual whose name is listed in this publication and who fails to complete degree requirements as planned is not again listed in subsequent commencement programs. Attendance of commencement exercises is not compulsory but all seniors are required to pay the specified graduation fee, which covers the cost of the diploma, the diploma cover, academic attire, and incidental graduation expenses. Students who do not elect to attend commencement ceremonies may not be granted a refund of the commencement fee. Since diplomas are not issued until degrees have been conferred by the Board of Trustees during the designated voting periods, all diplomas are mailed to graduates. Accordingly, an individual who wishes to receive a diploma must file a corrected address with the Office of the Registrar if he or she anticipates moving from a previously reported permanent address.

CONFERRING OF DEGREES

The Board of Trustees votes degrees three times a year: in June (for students completing degree requirements during the spring semester), in October (for students completing degree requirements during the summer term), and in March (for students completing degree requirements during the fall semester). Individuals who wish to submit verification of degree completion to employers or to graduate schools during the period between the end of their final grading period and the conferring of degrees may obtain a letter of completion from their college dean. *Duplicate diplomas are not issued for any reason.*

COURSE EQUIVALENCY EXAMINATIONS

Subject to specified policies of academic departments, unusually qualified degree candidates are given the opportunity to demonstrate their special competencies and to receive University credit for such competencies through established course equivalency procedures without having to fulfill classroom or faculty course requirements. Matriculating students may demonstrate their special competencies through subject examinations of the College Level Examination Program and through departmental equivalency examinations. Credits which are granted through course equivalency procedures are noted on the student's permanent record card. However, no grades for equivalency examinations are recorded and such examination credit as may be granted is not computed for determining grade-point averages.

The purpose of course equivalency procedures is to provide credit for existing competencies — that is, those competencies which students possess prior to their application for equivalency credit and prior to their registration for a University course. Students may not receive credit for a specific proficiency examination if they have registered at the University in the course which that examination represents, if they have previously received a University grade for that course or a course in sequence above the course for which they wish to take the examination, or if they have previously received transfer credit for an equivalent course taken at another institution. Credit for general examinations of CLEP may not be granted to students after their admission to the University as matriculating students. University departments reserve the right to refuse the granting of credit by examination for those courses which are presented by a student for his or her major(s) and to deny recognition of previously granted credit for students who prior to their declaration of major field have received equivalency credit in the subsequently declared major.

Subject to the additional limitations of the college and program in which the student is enrolled, the maximum number of credits which a matriculating student may earn through course equivalency procedures is 30 semester credits. Students who have transferred to the University may not apply for equivalency credit in excess of a number which is determined by subtracting all course equivalency and transfer credits which are accepted by the University from the maximum of 90 credits which is permitted for both transfer and equivalency credit. Nor may transfer students present equivalency credits in fulfillment of the major field residency requirement of 15 credits in University courses or the general residency requirement of 30 credits in University day courses. (Cf. "Residency Requirements.")

College Level Examination Program (CLEP)

Students who are interested in taking subject examinations of the College Level Examination Program should secure petition forms from the Office of the Registrar which will permit matriculating students of the University to arrange for administration of CLEP tests. Approved forms must be filed with the Office of the Registrar. Application to take approved subject examinations of the College Level Examination Program may be made at the Office of Continuing Education or other CLEP testing center. CLEP tests are administered at the University during the third week of each month. Course credit through the subject examinations of CLEP will be granted only if an examination has been approved by an individual's faculty advisor and the chairperson of the department which offers the course for which the CLEP test is a substitute and the score attained by the individual is one which has been specified by the College Entrance Examination Board as being of "C" grade achievement or better. Although students are advised to secure the above authorizations prior to taking a CLEP test in order to avoid rejection of a request for credit after a test has been taken, such authorization may be solicited after completion of a test. The following is a listing of CLEP tests for which degree credits may be granted.

FINAL GRADE IN COLLEGE COURSE	A	B	C	Credit	FINAL GRADE IN COLLEGE COURSE	A	B	C	Credit
Afro-American History	57	55	49	3	Freshman English	55	51	47	6
American Government	58	55	47	3	General Chemistry	65	53	48	3
American History	59	53	46	6	General Psychology	65	55	47	3
American Literature	57	50	46	6	Geology	61	53	49	6
Analysis and Interpretation of Literature	61	55	49	3	Hematology	56	51	46	3
Anatomy, Physiology, Microbiology	55	51	44	6	History of American Education	57	51	46	3
Biology	61	53	49	6	Human Growth and Development	56	52	47	3
Calculus with Analytic Geometry	57	51	47	8	Immunohematology	56	50	47	3
Clinical Chemistry	57	51	47	3	Introduction to Business Management	61	52	47	3
College Algebra	62	55	50	3	Introductory Accounting	61	56	50	6
College Algebra- Trigonometry	60	55	49	3	Introductory Business Law	63	57	51	3
College French (four semesters)	63	57	53	12	Introductory Macroeconomics	63	55	48	3
College German (four semesters)	61	54	48	12	Introductory Marketing	61	53	48	3
College Spanish (four semesters)	60	54	50	12	Introductory Microeconomics	61	54	47	3
Computers and Data Processing	57	50	46	3	Introductory Micro- and Macroeconomics	61	54	47	3
Educational Psychology	59	51	47	3	Introductory Sociology	57	52	47	3
Elementary Computer Programming					Microbiology	59	53	48	3
Fortran IV	58	53	48	3	Money and Banking	58	54	48	3
English Literature	60	50	46	6	Statistics	60	53	49	3
					Tests and Measurements	64	52	46	3
					Trigonometry	62	55	49	3
					Western Civilization	63	56	50	6

Departmental Examinations

Students who are interested in taking departmental examinations may obtain applications for such examinations from the Office of the Registrar at any time during the fall and spring semesters, but they must initiate the application process in sufficient time to permit the completion of examinations and the processing of examination results prior to the final deadline for filing course grades during the semester in which they are examined. Applications for departmental course-equivalency examinations are filed with the appropriate faculty examiner after approval by the student's advisor, his or her major department chairperson, the chairperson of the department in which the examination is to be administered, and the faculty examiner.

Students may not repeat departmental equivalency examinations and, except for documented medical reasons or personal emergencies, they may not reapply for such examinations in the event that they fail to keep an examination appointment. Examinations must be wholly or substantially written unless the nature of the course makes more appropriate an oral or performance examination. Departments may authorize instructors to administer end of semester examinations which are scheduled during the final examination period when such examinations are adequate measures of total course requirements. After the student has completed an authorized examination, the faculty examiner must file his or her recommendation for course credit with the Office of the Registrar by the final deadline for filing semester grades.

ACADEMIC HONORS

Academic honors are of three types: University honors, honors in major fields, and semester honors. Students enrolled in all colleges may qualify for University and semester honors. Honors in major fields are awarded at the option of major departments.

University Honors

The University awards degrees with three levels of distinction upon those graduating students who have exhibited exceptional scholastic records. To be eligible for such honors each student must achieve a minimum grade-point average of 3.00 for all courses completed at the University (or through its auspices under regulations which govern authorized off-campus course work) and must have earned a minimum of 60 semester credits at the University as *upperclass* students. Additionally, the record of each student must qualify him or her for the percentile distributions cited below as applied by each college to its total number of graduating students.

Summa Cum Laude	99th through the 98th percentiles
Magna Cum Laude	97th through the 90th percentiles
Cum Laude	89th through the 75th percentiles

Honors in Major Fields

In addition to honors which are awarded by the University, honors in major fields may be awarded by the colleges in which students are enrolled or (in the case of continuing education students) by the colleges which exercise academic jurisdiction over the programs in which they are enrolled. Recommendations for such honors are made by the faculty of the student's major department (or by interdisciplinary committees which exercise academic jurisdiction over the student's major studies) for outstanding achievement in the major field. In order to qualify for such honors, the student must fulfill the following requirements:

Complete a minimum of 24 credits in the major field at the University of Lowell;

Fulfill any honors requirements as specified by colleges, departments, or interdisciplinary committees in the major field; and

Achieve a grade-point average as specified below:

High	4.00 in all courses which are taken in the major field at the University of Lowell;
Honors	3.50 to 3.99 in all courses which are taken in the major field at the University of Lowell with no course grade in such courses less than "B".

Honors in the major field are noted on the permanent record cards of students and upon baccalaureate diplomas and are recorded as "(Major specified) with High Honors" and "(Major specified) with Honors".

Semester Honors (Dean's List)

At the end of the fall and spring semester, the dean of each college issues a list of students who have achieved distinguished semester records. This list recognizes students who have completed full-time programs (at least 12 credits of which must have been qualitatively graded) with no grade less than "B".

GRADING POLICIES

The following qualitative letter grades are employed by faculty members to characterize the quality of a student's work in a course: "A", "AB", "B", "BC", "C", "CD", "D", and "F" and respectively carry quality points of 4.00, 3.50, 3.00, 2.50, 2.00, 1.50, 1.00, and 0.

- "A" designates that the work done by the student is superior and is of the highest honors quality;
- "AB" designates that the work done by the student is less than superior but is completed with the level of distinction which is higher than the basic honors level;
- "B" designates that the work done by the student is of basic honors quality;
- "BC" designates that the work done by the student is less than honors quality but is better than satisfactory;
- "C" indicates satisfactory work which conforms to the general expectations of the University for baccalaureate study;
- "CD" indicates that the work done by the student is less than satisfactory and below graduation standard but is better than the minimum requirement for passing a course;
- "D" indicates work which meets the minimum requirement for passing a course;
- "F" designates course failure.

In addition to the above qualitative letter grades, the following symbols also are used to designate special enrollment provisions or course statuses and do not affect the student's academic average:

- "P" designates completion with credit of an unrestricted elective or physical activities course which was taken on a "pass-no credit" basis;
- "NC" indicates failure of an unrestricted elective or physical activities course which was taken on a "pass-no credit" basis;
- "S" designates satisfactory completion of a practicum experience course with a final course grade of "C" or higher;
- "U" indicates unsatisfactory performance in a practicum experience course with a final course grade of less than "C";
- "I" indicates a course which has not been completed;
- "AU" designates that the student has registered for a course on an "audit" basis and has maintained an attendance record throughout the semester which is sufficient to warrant an official recognition of course attendance;
- "W" designates student withdrawal from the University prior to the 41st class day of a semester or from a course during the period from the 10th to the 40th class day;
- "X" designates student withdrawal after the 40th class day of a semester for administratively approved reasons of an emergency or medical nature; and
- "Y" designates administrative dismissal for other than academic reasons.



Pass-No Credit Course Registration

Students may elect to register on a pass-no credit basis for a maximum of four unrestricted elective courses. These courses are in addition to those completed for the Physical Activities Requirement. A student may not change his or her enrollment status from letter grade to pass-no credit or from pass-no credit to letter grade after the established deadline for adding a course. A pass-no credit course cannot be presented in fulfillment of University Core Requirements, major programs, minor programs, or specifically designated courses of an established curriculum. A grade of "P" indicates that a student's performance merits an evaluation of "D" or better. "NC" indicates that a course has been failed but that such failure is without prejudice to the student's cumulative average. Although appropriate credits are granted to students when grades of "P" have been assigned, these credits are not qualitatively weighted and hence do not affect a student's academic average.

Satisfactory-Unsatisfactory Course Registration

Certain courses (e.g., practicum experiences, advanced seminars, and directed studies) may be graded as satisfactory or unsatisfactory. A grade of "S" indicates that a student's performance merits an evaluation of "C" or better. "U" indicates a course evaluation of less than "C". Although appropriate credits are granted to students when grades of "S" have been assigned, these credits are not qualita-

tively weighted and hence do not affect a student's academic average. A grade of "U" indicates that attempted course credits have not been granted and is awarded without prejudice to a student's cumulative average.

Incompleted Courses

The letter symbol "I" (incomplete) is a temporary notation which is assigned for incomplete work in courses when the records of students have been satisfactory but for legitimate reasons a minor portion of their course work remains to be completed or when the course records of students justify the expectation that they will obtain a passing grade but for emergency reasons they have been absent from the final course evaluation. Any missed final examination or other final course evaluation requires a student explanation within 48 hours so that the instructor can file the proper course notation with the Office of the Registrar. A student who has evidenced an unsatisfactory course record, who has failed to complete a major portion of an instructor's course requirements, or who fails to provide an instructor with a satisfactory reason for absence from a final examination or final course evaluation within the specified 48 hour period may not be assigned the letter symbol "I". Responsibility for making arrangements with an instructor to complete all outstanding course work rests entirely with the student, who must complete all course work in sufficient time to permit an instructor to file a final course grade no later than one month after the date on which the succeeding semester begins.

Permanent Course Notations

Instructors who file letter symbols of "I" also must file an end of course letter grade which will be assigned in the event that incompleted course work is not made up by the student prior to the established deadline. At the end of the official make-up period (or, in the event of a substantiated student emergency, at the end of an extended make-up period), the Office of the Registrar will convert the temporary notation of "I" to the appropriate permanent symbol. This permanent notation will be one of the following: (1) a letter grade which has been filed by an instructor during the grading period of the previous semester to designate the final course standing of a student who has failed to make up incompleted course requirements, (2) a letter grade which is filed by an instructor at the end of the make-up period to designate the final course standing of a student who has make up incompleted course requirements, or (3) the letter symbol "X" which the dean of the college in which the student is enrolled as a degree candidate may authorize, upon consultation with full-time course instructors, to designate that a student has withdrawn from the University after the end of the semester for documented reasons relating to a medical or personal emergency. (Cf. "University Withdrawal After the End of the Semester.")

Extension of Make-up Period

Limited extensions of the make-up period may be granted to students for serious medical reasons and for documented personal emergencies. Requests for such extensions are approved by the dean of the college in which students are enrolled

as degree candidates and must be filed no later than one calendar week preceding the established deadline for instructors to submit final grades for incompleted courses. Except for extraordinary circumstances acceptable to a college dean, the maximum period for which an extension may be granted is the end of the semester following the assignment of "I" notations.

Audited Courses

A student may enroll in credit courses as an auditor with appropriate approval. Forms and instructions for registration as an auditor may be obtained from the Office of the Registrar. No charge is levied on full-time students for audited courses. No credit or grade will be recorded for an audited course, but the symbol "AU" may be listed on the permanent record card at the request of the course instructor when he or she judges that the student has exhibited satisfactory attendance. A change from auditor to credit status, or from credit status to auditor, may not be made after the deadline for adding a course.

Credit may not be earned in courses which have been audited except by re-enrollment in and completion of the course with a passing grade. Students who have audited a course subsequently may not earn credit in the same course through tests of the College Level Examination Program or through other authorized examination procedures for course challenge.

GRADE CHANGES

At the end of each semester, the Office of the Registrar mails a grade report to each student. This report constitutes official notification of grades received. All course grades become a part of the student's official record upon instructor assignment and may not be changed except as specifically provided by University procedures. Corrections of grade-point averages automatically are authorized when erroneous grade reports are corrected by instructors and when specific courses are deleted from grade-point averages under provisions of University regulations governing repeated failed courses, change of enrollment status as an intercollegiate transfer within the University, and expiration of degree credits.

Students who believe that mistakes have been made in assigning or recording course grades should notify instructors as soon as possible after receiving their grade reports but in no case at a time later than the deadline established for making grade corrections. The deadline for instructors to correct an erroneous grade report is one calendar month from the beginning of the semester following the filing of an erroneous grade. It is the responsibility of students to notify instructors of erroneous grades as soon as they have received final grade reports from the Office of the Registrar. Changes of grades other than the filing of grades for incompleted courses require the endorsement of the appropriate college dean. Grade changes may not be made on a student's permanent record card after the deadlines cited above unless such changes have been authorized by appropriate college deans prior to the expiration of the correction deadline. Accordingly, students who experience difficulty in contacting faculty members for the purpose of questioning assigned grades should consult the appropriate college dean prior to the expiration of the correction deadline.

WITHDRAWAL FROM COURSES

"W" and "X" are not academic grades but administrative symbols which indicate that a student has been authorized to withdraw from courses. These symbols, which are entered upon the student's permanent record card without prejudice, may be authorized only by the Registrar in accordance with established policies of the University and only upon student request. Accordingly, they may not be assigned by instructors as characterizations of student failure to fulfill course requirements or to satisfy classroom commitments.

Course Withdrawal Through the 40th Class Day

Students who desire to withdraw from courses with notations of "W" during the period from the 11th to the 40th class day of a semester must secure the signatures of advisors and course instructors on official course drop cards and must file these forms with the Office of the Registrar no later than the 40th class day. Students who do not complete the process of withdrawal by the 40th class day will not be assigned course notations of "W", will be subject to all instructor course requirements, and will receive final course grades. Since it may take several days to secure necessary faculty signatures, and since such unforeseen circumstances as late trains, automobile breakdowns, and faculty absences unexpectedly may extend the period during which a student has planned to complete the withdrawal process, a student who delays his or her course withdrawal until the end of the withdrawal period may discover that it is impossible to comply with the withdrawal deadline of the 40th class day. Students may not withdraw from courses without authorization from college deans and the Associate Vice President for Instruction or his designee when such withdrawal will result in a course load of less than 12 credits. (Cf. "Course Load Policies.") Students who withdraw from all courses are required to withdraw from the University. Students receiving benefits from the Veterans Administration are not permitted to reduce their course loads below the full or part-time levels which they have reported to the Veterans Administration. Procedures for withdrawal from a course of 8 weeks duration are the same as those for regular courses, except that the 40th class day is designated as the class meeting which corresponds to 4/7's of scheduled contact hours. Course withdrawal from apprentice teaching is subject to special requirements of the College of Education.

Course Withdrawal After the 40th Class Day

Course withdrawal after the 40th class day of a semester ordinarily requires withdrawal from the University but may be authorized for less than a student's full program if there are extenuating circumstances relating to illness or critical personal emergency. A student who has remained in class after the 40th class day and has fallen behind in his or her course work for reasons of illness or critical personal emergency should consult with the course instructor concerning the possibility of receiving a course evaluation of "I" (incomplete) prior to initiating a petition to withdraw. A student who has been advised that a course evaluation of "I" is not possible must file an academic petition, together with

appropriate documentation, with the dean of the college in which he or she is enrolled. Following a review of the student's petition and verification of attached documentation*, the dean of the college may permit the student to secure the signature of his or her faculty advisor and to solicit the endorsement of the course instructor. The approved petition must be filed with the Office of the Registrar prior to the first day of final examinations. A student who fails to complete all course withdrawal procedures prior to the first day of the examination period will be denied permission to withdraw from a course with a notation of "X" and must be graded.

Additional authorization of the Associate Vice President for Instruction or his designee is required for an academic petition which requests permission for a final course load of less than 12 credits. (Cf. "Course Load Policies.") Students receiving benefits from the Veterans Administration are not permitted to reduce their course loads below the full or part-time levels which they have reported to the Veterans Administration. Procedures for withdrawal from a course of 8 weeks duration are the same as those for regular courses, except that the 40th class day is designated as the class meeting which corresponds to 4/7's of scheduled contact hours. Course withdrawal from apprentice teaching is subject to special requirements of the College of Education.

*The assistance of the Dean of Students may be solicited in securing verification of medical and legal documents.

WITHDRAWAL FROM THE UNIVERSITY

All students who desire to withdraw from the University are required as a minimum expectation to discharge all financial obligations to the University, to return all University property, to have a conference with the Dean of Students, and to file a written notification of withdrawal with the Office of the Registrar. Since the date of official withdrawal as recorded by the Office of the Registrar is one basis of any claim for tuition refund and may be of importance in determining subsequent legal or student insurance claims, students should process withdrawal papers in person prior to leaving the University. Students who absent themselves from the University without officially withdrawing will remain on class rosters until they officially withdraw from the University or until the end of the semester. Students who remain on class rosters after the 40th class day will be assigned final course grades which characterize satisfaction of their instructor's course requirements (presumably failing grades) and subsequently may be denied readmission to the University for inadequate scholarship. The date on which a withdrawal request is filed with the Office of the Registrar is the date on which withdrawal is academically effective and constitutes the basis for final course notations.

Since students who are recipients of benefits from the Veterans Administration may not process withdrawals from the University which violate their compulsory declarations of classroom attendance, the University may postpone or deny student requests for withdrawal to assure institutional compliance with regu-

lations of the Veterans Administration. Recipients' of veterans benefits are warned that they must receive course grades when their requests to withdraw from the University have been filed after deadlines of the Veterans Administration for processing changes of declared benefit status or when their dates of withdrawal will conflict with declarations of classroom attendance.

University Withdrawal Through the 40th Class Day

Students who register for courses and who withdraw from the University prior to the first day of classes of a semester are withdrawn without record. Students who register for courses and who withdraw from the University from the 1st to the 40th class day of a semester are withdrawn with course notations of "W".

University Withdrawal After the 40th Class Day

A student who withdraws from the University during the period from the 41st class day to the end of the semester must be graded by all course instructors unless he or she is authorized to withdraw for documented reasons of extended illness or extended personal emergency. A student who wishes to withdraw temporarily or permanently from the University after the 40th class day of a semester for such reasons must file an academic petition, together with appropriate documentation, with the dean of the college in which he or she is enrolled. Following a review of the academic petition and verification of attached documentation*, the dean of the college may permit the student to secure the signature of his or her faculty advisor and to solicit the endorsement of course instructors. The completed petition, which must be filed with the Office of the Registrar prior to the student's departure from the University, authorizes notations of "X" only for courses from which withdrawal has been endorsed by course instructors. Permission to withdraw from a course will not be arbitrarily denied by an instructor, who shall communicate his or her reasons for denial to the college dean and to the student.

*The assistance of the Dean of Students may be solicited in securing verification of medical and legal documents.

University Withdrawal After the End of the Semester

A student who has unofficially withdrawn from the University for reasons of extended illness or extended personal emergency and (for good and sufficient reasons acceptable to the dean of his or her college) has been unable to officially withdraw from the University before the end of the semester may petition to withdraw from all courses with symbols of "X". Such a student must file an academic petition (together with supporting documentation of the medical or personal emergency which is alleged to have necessitated his or her unofficial absence) no later than the established deadline of the following semester for

filing grade changes for the semester of unofficial withdrawal. (Cf. Academic Calendar.) This petition must be filed with the Registrar, who will forward all submitted materials to the appropriate college dean for his or her decision. Following a review of the academic petition and verification of attached documentation*, the dean shall consult with full-time course instructors and shall forward his or her decision to the Registrar, who shall notify the student of the dean's decision. A student who has been the recipient of benefits of the Veterans Administration may petition to withdraw from the University after the end of the semester only when he or she has been provided with written authorization from the Veterans Administration.

*The assistance of the Dean of Students may be solicited in securing verification of medical and legal documents.

ADMINISTRATIVE DISMISSAL FROM THE UNIVERSITY

A student may be administratively dismissed from the University through cancellation of registration for due cause, through expulsion for academic dishonesty, and through disciplinary procedures for violations of good conduct. For information concerning disciplinary procedures which govern violations of campus conduct, cf. "Student Regulations."

Non-Academic Dismissal

Administrative dismissal may be invoked when a student fails to comply, *after due notice*, with an administrative requirement of the University. Official notation of an administrative dismissal is noted on the permanent report card by the symbol "Y", which is entered for each course which has been carried by the dismissed student. Reinstatement of a student who has been administratively dismissed may be made only by application for readmission with the Office of Admissions and only when the condition which has necessitated administrative dismissal can be ameliorated to the satisfaction of University officials. Examples of some conditions which may justify administrative dismissal are as follows:

- Forgery or fraudulent use of University records, documents, or forms;
- Non-payment of tuition, board, room charges, student fees, library fines, overdue University loans, and other official University fiscal obligations;
- Failure to comply with duly authorized administration order relating to the safety of persons or the protection of University property;
- Failure to submit necessary health forms as required by University Health Services; and
- Failure to withdraw from the University after certification of a physical health or mental health program of a hazardous nature.

Academic Expulsion

Students who have evidenced academic dishonesty may be administratively expelled from the University. University departments and colleges have estab-

lished procedures for adjudicating charges of academic dishonesty and for establishing penalties up to and including administrative dismissal. The following definitions are provided for the information of all students and constitute official notice of unacceptable academic behavior.

Cheating is defined as (1) misrepresenting academic work which has been done by another as one's own efforts — whether such misrepresentation has been accomplished with or without the permission of the other individual, (2) utilization of prohibited assistance (whether in the nature of a person or a resource) in the performance of assignments and examinations, and (3) copying of another student's work or the giving or receiving of information or answers (whether verbally or in writing) during an examination.

Plagiarism is defined as (1) direct quotation or word for word copying of all or part of the work of another without identification or acknowledgement of the quoted work, (2) extensive use of acknowledged quotation from the work of others which is joined together by a few words or lines of one's own text, (3) an abbreviated restatement of someone else's analysis or conclusion, however skillfully paraphrased, without acknowledgement that another person's text has been the basis for the recapitulation, and (4) the use of an apt term or phrase which is taken from another's text and is inserted into one's own work without acknowledgement of the source.

A student who makes use of the services of a commercial term-paper company is in violation of University regulations concerning cheating. In the event that the penalty for academic dishonesty has been specified as expulsion, such action shall be with academic prejudice and shall entail failure in those courses in which dishonesty has taken place.

ACADEMIC STANDING

Academic standing and eligibility for a degree are determined by the quality of the student's course work.

Determination of Academic Standing

To ascertain the student's academic standing, the University uses a point system, each qualitative grade having an equivalent numerical value. A grade of "A" has a value of 4.00, a grade of "AB" a value of 3.50, a grade of "B" a value of 3.00, a grade of "BC" a value of 2.50, a grade of "C" a value of 2.00, a grade of "CD" a value of 1.50, a grade of "D" a value of 1.00, and a grade of "F" a value of 0. Quality points are computed by multiplying the course credit by the numerical value of a qualitative grade assigned. For instance, a 3 credit course completed with a grade of "BC" would carry 7.50 quality points (3x2.50). The grade-point average is obtained by dividing the total number of quality points earned by the total number of credits completed and graded with those qualitative grades which are cited above.

Each student is subject to the following grade-point requirements# for the specified numbers of completed course hours:

#The cited grade-point averages are *minimum* University requirements. Individual colleges or departments may establish higher requirements.

Course Hours Completed*	Grade-Point Averages for Satisfactory Standing†	Grade-Point Averages for Academic Warning†	Grade-Point Averages for Academic Suspension†
12-30	1.500	1.400-1.499	1.399 or below
31-45	1.600	1.500-1.599	1.499 or below
46-60	1.700	1.600-1.699	1.599 or below
61-75	1.800	1.700-1.799	1.699 or below
76-90	1.900	1.800-1.899	1.799 or below
91-graduation	2.000	1.900-1.999	1.899 or below

*Included in Course Hours Completed are all course credits which have been granted (including credits awarded through transfer and challenge by examination, course credits which have been awarded with qualitative letter grades, and credits awarded with non-qualitative grades of "P" and "S") and all hours of course work which have been failed with the qualitative letter grade of "F." Courses which have been failed and which carry the nonqualitative symbols "U" and "NC" are not included in the computation of Course Hours Completed.

†Specified Grade-Point Averages are computed solely on the basis of those courses completed at the University of Lowell (or through University auspices within policies governing authorized off-campus study) which have been qualitatively evaluated with the following letter grades: "A", "AB", "B", "BC", "C", "CD", "D", and "F."

Review of Academic Records

For the purpose of determining satisfactory academic standing, academic warning, and academic suspension, the record of each student is routinely analyzed. The records of all entering freshmen students are initially evaluated at the end of the semester in which they have attempted their first 12 credits at the University. The records of all entering transfer students are initially evaluated at the end of the semester in which these students have attempted their first 18 credits at the University. Entering freshmen and transfer students who are permitted to initiate their University studies with summer school day courses should note that credits attempted in University summer sessions are included in calculations for the fall semester. Entering students who have initiated their University studies in authorized summer school courses are not permitted to invoke the regulation concerning course repetition for the purpose of grade substitution prior to the initial evaluation of their academic standing. Subsequent to these initial evaluations, the records of all full-time students, including students who have been granted reduced load status, are evaluated at the end of each semester. The records of matriculated students in the Second Chance Program for Adults are evaluated at the end of each semester in which they have attempted each additional 12 credits. Continuing education and summer school courses and authorized off-campus courses are included in appropriate end-of-semester calculations. The following regulations governing academic warning, suspension, and probation are applicable as stated to all students.

Academic Warning

A student whose cumulative grade-point average falls below the minimum University requirement for course hours completed by no more than 0.10 is

placed on academic warning and is so informed. A full-time student who has been placed on academic warning and who has not attained satisfactory standing by the end of the following full-time semester is suspended from the University. A matriculated student in the Second Chance Program for Adults who has been placed on academic warning is required to achieve satisfactory standing by the end of the semester in which the next 15 credits have been attempted following his or her notification of academic warning. Students who have been placed on warning that their academic achievement is deficient should consider the desirability of declaring another major or of transferring to another college within the University. Intercollegiate transfer is not permitted for suspended students who petition for readmission with probationary status.

Academic Suspension

A full-time student, reduced-load student, or matriculating student in the Second Chance Program for Adults whose cumulative grade-point average at the end of any semester falls below the minimum University requirement for course hours completed by more than 0.10 is immediately suspended. A student who has been suspended is prohibited from enrolling in any program of the University, including credit courses of continuing education and summer sessions of the University.

Academic Probation

A student who has been suspended from the University is entitled to apply to the Office of Admissions for readmission as a probationary student in accordance with procedures enumerated under the admission policy heading "Readmission Procedures." Students who are readmitted on probation will receive a letter from the academic standards committee which specifies their probationary course load (not less than 12 credits for other than matriculated Second Chance students) and the semester average which they must achieve during their probationary semester in order to achieve satisfactory academic standing. Matriculated Second Chance students who are readmitted on probation are subject to the same policies which govern full-time students, except that academic standards committees may specify a period of part-time probationary studies at the end of which the student shall have achieved satisfactory academic standing or shall be dismissed. Probationary students are prohibited from holding student offices and from representing the University in athletic or other activities.

A student who achieves the required semester average during his or her probation is automatically reinstated as a student in satisfactory academic standing. A student whose semester average falls below the required semester average by no more than 0.10 may be granted an extension of the probationary period for one additional semester. Such extension of probation, if granted, will be made by the appropriate academic standards committee during the period between semesters. Students who are granted such extensions will be notified in writing prior to the beginning of classes for the following semester that they have been granted an additional semester to achieve satisfactory academic

standing. Students who fail to achieve satisfactory academic standing and are not granted extensions of their probations by the appropriate academic standards committees and students who are granted such extensions and fail to achieve satisfactory academic standing are permanently dismissed from the University and are subsequently barred from attending both day and evening courses.

Students who have been readmitted on probation may not invoke University regulations which govern course repetition for the purpose of deleting "F" grades from cumulative averages.* Nor may they withdraw from any course unless they withdraw from the University with permission of the college dean for reasons of emergency or for medical reasons. A probationary student who withdraws from any course without authorization of the college dean cannot by definition satisfy the conditions of his or her probation and will be permanently dismissed from the University at the end of the current semester of enrollment.

Probationary students who receive course evaluations of "I" (incomplete) and who fail to make-up their work prior to the beginning of the next semester are advised that they may not qualify for extension of their probation, may not register for nor attend University courses (including continuing education courses), and may not receive authorization to pursue off-campus studies until such time as a final determination of their status has been made. Accordingly, probationary students are advised that they should not delay completion of course work until the make-up deadline which has been established for students in satisfactory standing unless they wish to postpone resumption of their studies. Students who have received permission of a college dean to extend their make-up period should understand that such authorized extension does not waive the requirement for a final determination of academic standing which is based upon grades for all probationary courses.

*Following the attainment of satisfactory academic standing and removal from probation, a student who has failed a course during the two semesters preceding suspension and has repeated and passed such a course during his or her probationary period may retroactively invoke the provision which permits deletion of the course failure from the cumulative grade-point average.

REGISTRATION AND COURSE ENROLLMENT POLICIES

All students are required to register for courses during periods which are officially designated for registration and preregistration unless they have been authorized to make other arrangements by the dean of the college in which they are matriculated. Non-matriculated students are permitted to enroll for course loads only as specified by their conditions of admission. Except for part-time students in the Second Chance Program, all matriculated students should register for course loads which comply with recommended courses of study and must comply with the following policies concerning semester course loads and reduced load status.

Semester Registration

Students are required to register in person during the designated preregistration and registration periods. Students have complied with the preregistration requirement when they have had a schedule of lecture, recitation, and laboratory work approved by their advisors and have filled in and processed the forms provided by the Registrar's Office. They have satisfied the registration requirement when they have paid the required tuition and fees and have complied with the course drop and add process. Endorsements of instructors and advisors are required for each change of enrollment card which is filed. Students who preregister for courses for which they subsequently fail to satisfy prerequisites must initiate changes of enrollment during the drop-add period unless they have the permission of instructors to remain registered in these courses. *Students are not enrolled in classes for which they are not properly registered.*

The Office of the Registrar mails copies of individual semester schedules to students through their University mail boxes. Students are advised that such mailing constitutes official notification from the University concerning each individual's record of course registrations. Students who believe that errors have been made in their registrations should consult with the Office of the Registrar prior to the deadline for adding courses. *Students who do not check their mail boxes and accordingly fail to correct scheduling errors by established deadlines may not expect to have University regulations waived for their benefit.*

Semester Course Loads

The typical course load expectation for full-time students is 15 credits. Professional curricula may specify credits in excess of this number, in which case such specifications are regarded as regular course loads.

Maximum Credit Loads

Students may enroll for course loads in excess of 15 credits but are advised that course loads in excess of the number of credits specified by recommended courses of study may not be in their academic interests when their grade-point averages are less than 3.00. Unless specified as part of an established course of study, course loads in excess of 15 credits are recommended for enrichment purposes only and should be taken as pass courses. In any event, a student is prohibited from registering for course loads in excess of 18 credits unless such loads are required by established University curricula or unless special permission has been granted by the dean of the college in which the student has established matriculation. Students who are enrolled in curricula which do not require a semester course load in excess of 18 credits and who wish to obtain permission to carry such an overload must file an academic petition with the dean of the college in which they have established matriculation. Students who register for course loads in excess of 18 credits (including continuing-education courses) without the prior authorization of the dean of the college in which they have established matriculation will not receive credit for more than 18 credits per

semester and the college dean shall determine which course(s) shall receive the administrative symbol(s) of "Y."

Minimum Credit Loads

Matriculating students are classified as full time when they carry a course credit load in University day programs which is specified by their curricula. Full-time students are required to register for a minimum of 12 credits of day courses each semester and, unless subsequently granted reduced load status, to remain registered for 12 credits of day courses at all times.

Reduced Load Status

Upon the written recommendation of college deans, full-time students may petition the Associate Vice President for Instruction or his designee for exemption from the minimum course load requirement for reasons involving health or critical personal and academic problems. Such petition may be filed up to the 40th class day of the semester but cannot be made more than twice during a student's undergraduate career. Permission to carry a reduced load does not waive the requirement for completing degree requirements within ten full-time semesters unless subsequent permission to extend the undergraduate period of study is granted by the dean of the college in which the student is matriculated.

Students who have been granted reduced load status are subject to all fees and academic regulations which are in effect for full-time students. Reduced load students are advised that they are not eligible for tuition refunds, that their financial aid eligibility may be jeopardized, that they may not participate in varsity athletics, and that they must maintain satisfactory academic standing at the end of the semester during which a reduced load is authorized.

REPEATED COURSEWORK

Coursework may be repeated only in accordance with the following policies concerning the repetition of transferred courses and failed required courses. Grade substitutions for repeated courses may be permitted as prescribed below.

Repetition of Transferred Courses

When his or her competence has been demonstrably inadequate, a student who has been granted transfer credit (and on this basis has been assigned to advanced courses for which the transferred course is a prerequisite) may be advised to repeat such transferred work at the University or to take a more elementary course than that which has been transferred. Permission to repeat a transferred course is granted by filing an academic petition form with the dean of the college. Since credit may not be granted more than once for the completion of any course, a condition for filing such a petition is the simultaneous filing of a request to revoke recognition of the previously transferred course.

Failed Required Courses

Except for courses of a professional nature which regulations of a college may designate as being non-repeatable, students must repeat and pass all required courses which they have failed. Courses in which "F" grades have been received must be repeated and passed before students may take courses for which those failed are prerequisites. A course which is failed but is not required for a student's program need not be repeated, but other course work must be taken when a student's total degree program will fall short of the specified credit hours for degree requirements. Unless a failed course is repeated within the provisions of the following regulation, both the original failing grade and the repeated course grade are counted in computing grade-point averages.

Grade Substitution

Except for courses which are designated as being non-repeatable, students may substitute passing grades for repeated failed courses in the computation of their cumulative grade-point averages as provided by the following regulation. Non-probationary students must repeat courses under this regulation within the next two semesters of attendance following their course failures. Although probationary students may not invoke the grade-substitution provision during their periods of probation, they may retroactively invoke the provision during the semester immediately following removal from probation for all courses which they have failed during the two semesters preceding their suspensions and which they have repeated while on probation. Students who have completed their probationary periods satisfactorily also may repeat during the following semester courses which were failed during the two semesters preceding suspension but which were not repeated while on probation.

Students entering the University as freshmen or transferring to the University with less than 60 semester credits are permitted a maximum of 10 semester credits of course repetitions for the purpose of substituting grades for previously failed courses in the computation of their cumulative grade-point averages. Transfer students who are admitted with 60 or more semester credits are permitted a maximum of 7 semester credits of course repetitions for this purpose. The number of actual course repetitions which are permitted for any student depends upon the number of credits which are allocated to those courses which he or she wishes to repeat. For instance, a student who has entered the University as a freshman may repeat a 3 credit course three times or a 4 credit course two times. However, such a student may not repeat both a 3 credit and a 4 credit course two times since such repetitions exceed the maximum number of semester credits which are permitted under the grade substitution rule.

When students register for courses which they wish to repeat under the provisions of this regulation, they must notify the Registrar at the time of registration for the fall or spring semester, or at the time of registration for University summer sessions. Provisions of this regulation apply only to courses which are offered at the University of Lowell and accordingly may not be

extended to courses which may be authorized for completion at other institutions. A course substitution is not permitted under the provisions of this regulation unless a course has been dropped as a University offering and an alternate course has been authorized as a suitable substitution by the chairperson of the department which offered the course to be repeated. Once a student has reached the credit limitations which are cited above, no further courses may be repeated for the purpose of grade substitution.

Extension of Substitution Provisions for "CD" and "D" Grades

Students who have received grades of "CD" and "D" in courses which were completed during the Spring Semester, 1978, or previous semesters and who wish to repeat such courses for the purpose of grade substitution will be permitted to do so under provisions of previous grade-substitution policies through the end of the Fall Semester, 1980. This extension does not apply to courses initially taken during the Fall Semester, 1978, or subsequent semesters.

UNIVERSITY OF LOWELL CONTINUING EDUCATION & SUMMER SCHOOL COURSES

Subject to University residency requirements and college regulations,* the following categories of day students may be permitted to register for continuing-education and summer-school courses at the University of Lowell and to have such courses credited to baccalaureate day programs: (1) individuals who have been admitted to day colleges for full-time baccalaureate study, (2) individuals in satisfactory academic standing who are currently matriculating in day colleges of the University, and (3) previously matriculated students in day colleges who withdrew from the University while in satisfactory academic standing, who have been absent from the University for periods of not more than two semesters, and who have been readmitted to programs in which they were previously enrolled.

Individuals are warned that departments reserve the right to deny baccalaureate credit for University of Lowell continuing-education and summer-school courses which have been taken in violation of University residency requirements, curriculum requirements of their baccalaureate day programs, and/or special college regulations. Accordingly, individuals are advised to consult appropriate sections of this publication prior to enrolling in continuing-education and summer-school courses of the University in order to avoid subsequent denial of course credit during the period when programs of study are reviewed for the purpose of determining student satisfaction of degree requirements. Students who have been suspended or dismissed from day programs of the University are prohibited from enrolling in any program of the University. Students who combine University day courses with continuing-education courses during the regular academic year are subject to all restrictions concerning semester course loads. (Cf. "Registration and Course Enrollment Policies.")

*Special authorization is required by the College of Management Science for continuing education courses in areas of accounting, economics, and management.

OFF-CAMPUS STUDY

Individuals who have been admitted to day colleges for baccalaureate studies and who are enrolled currently in such colleges of the University (or who have been so enrolled within the previous two semesters and accordingly are subject to curriculum requirements in effect during the period of their previous enrollment) may be permitted to apply off-campus courses to their degree programs when they comply with established procedures. Off-campus courses may be taken in accredited institutions only and ordinarily should be taken at baccalaureate colleges or universities. Permission to pursue off-campus courses in accredited associate degree institutions may be granted only for courses which are to be presented for lower-division requirements of University of Lowell curricula. All off-campus courses must be taken under the regular grading system and may not be taken on a pass-no record basis.

Full University Recognition

Courses which are taken off campus may be treated as courses completed at the University if courses have been approved in advance and have been completed within course evaluation systems which are comparable to those letter grades of the University which carry quality-point designations. In order to achieve full recognition of such off-campus courses, a student must file a declaration of intent (together with appropriate endorsements by the student's faculty advisor, the chairperson of the major department, and chairpersons of departments offering those courses for which the contemplated courses are to be offered as substitutes) with the Office of the University Registrar prior to the initiation of off-campus courses. A separate declaration must be filed for each course to be taken. Upon receipt of an official transcript of record, the Office of the University Registrar will record the full report concerning all authorized courses (including courses which have been failed) upon the student's permanent record card and will compute all grades for off-campus courses into the student's cumulative grade-point average. It is the responsibility of the student to arrange with the office of the off-campus registrar for the forwarding of his or her official transcript to the University of Lowell prior to the end of his or her off-campus courses and to confirm the receipt of such transcript by the Office of the Registrar of the University of Lowell.

Transfer Recognition

Courses which have been completed off campus without the prior approval of faculty and/or department chairpersons and/or without prenotification of the Office of the University of Lowell Registrar subsequently may be recognized as transferred courses without quality-point designations if they have been completed with grades of "C" or better. Students wishing to receive recognition of such completed courses must petition the chairperson of their major department and the chairperson of the department offering those courses for which the completed off-campus courses are offered as substitutes and must file an approved academic petition with the Office of the Registrar *prior to the end of the semester which follows their completion of the off-campus courses.*

University Restrictions Concerning Off-Campus Study

Freshmen are not permitted to pursue off-campus courses until such time as an initial evaluation of their academic progress at the University has been made. Students who have transferred to the University with 60 or more semester credits, who have transferred with an associate degree, or who have been admitted from another institution with a baccalaureate degree to pursue a second bachelor's degree are not permitted to pursue off-campus studies. Students who combine University courses with off-campus courses during the regular academic year are subject to all restrictions concerning semester course loads.

Full-Time Off-Campus Study (Year Abroad and Visiting Student Programs)

Although off-campus courses generally are authorized on a part-time basis during the fall and spring semesters, they also may be authorized on a full-time basis for those students who have completed (or who will complete prior to graduation) three years of full-time study at Lowell (earning not less than 90 semester credits) and who wish to pursue their junior year abroad or who wish to complete their junior or senior year as visiting students at another baccalaureate institution while completing a Lowell degree. To receive authorization for such full-time study off-campus, students must comply with the procedures described above under the subheading "Full University Recognition." Since some colleges of the University do not permit full-time off-campus study, students should ascertain the policy of their college before pursuing arrangements with other institutions. Students who wish to pursue full-time off-campus studies are advised that they must satisfy residency regulations concerning courses in the major field. (Cf. "General Degree Requirements: Residency Requirements.")

SPECIAL MATRICULATION STATUS

Individuals who have qualified for part-time matriculated studies in the Second Chance Program for Adults and candidates for baccalaureate degrees in day colleges who have less than 12 credits to complete and who have been granted permission to carry part-time programs are classified as special matriculating students. Students who have less than 12 degree credits to complete may not petition for special matriculation status if they have previously carried reduced course loads for two semesters, and they may not be granted such status for more than two semesters. Special matriculating students pay limited fees and qualify for part-time tuition rates. Individuals who have been absent from the University for one or more semesters and who have completed all degree requirements but have not filed for a degree must apply for readmission through the Office of Admission for the purpose of obtaining a degree. Such individuals also are classified as special matriculating students but are subject to admission and graduation fees only.

CALENDAR DEADLINES FOR CHANGES OF COURSE ENROLLMENT STATUS

The last day for students to add a course, to change sections within a course, and to change enrollment status from audit to credit or from credit to audit and from pass-no credit to letter grade or from letter grade to pass-no credit is the 10th class day of the semester. The last day for dropping a course without penalty (with a course notation of "W") is the 40th class day of the semester.

ADVISORY SYSTEM

Academic advising is performed by full-time faculty members. Students who have been accepted by departments for academic or professional majors receive their academic advising from a member of their major department or, in the case of students pursuing interdisciplinary majors, from members of an appropriate interdepartmental committee. Students who have not made declarations of their major fields are assigned faculty advisors from within the college in which they are enrolled. Entering students are advised during the period of initial registration by a cadre of faculty advisors and are subsequently assigned advisors on the basis of their declarations of major subject. If an advisor has not been assigned by the beginning of the advisory period of the student's second registration, the student should immediately reveal this fact to the dean of the college in which he or she is enrolled.

The faculty advisor assists the student in developing a program of courses prior to semester registration and in formulating a program of studies leading to a degree and generally provides whatever guidance and assistance a student may require in making appropriate academic decisions throughout his or her period of baccalaureate studies. However, each student is personally responsible for complying with all rules and regulations of the University and is solely responsible for completing all degree requirements.

The advisor maintains records showing the program of study for each of his or her assigned students, including subjects taken, grades received, and changes of contemplated programs. For the purpose of providing appropriate academic advising, each faculty member is available for consultation throughout the semester. Faculty members maintain three office hours per week on three different days during periods in which classes are scheduled and maintain a minimum of five office hours per week in accordance with University requirements during periods of student advisement for course registration. Schedules of faculty office hours are published by departments for their members and the schedule of office hours for each faculty member is posted in such a manner as may be observed easily by students.

COURSE REQUIREMENTS

Within those policies which are listed below, faculty members are permitted to establish their examination and course requirements.

Course Examination Policies

Final examinations are generally expected for undergraduate courses of the University, but instructors may substitute other types of evaluation when in their judgment such substitution appears necessary or desirable and has been specified by their statements of course expectations. Final examinations may not be given at a place or time other than those which have been specified by the Registrar. With the exception of practical examinations for laboratory courses or sections, no examination (including written and oral examinations, take-home examinations, and music juries) may be scheduled during the last week of classes. Final take-home examinations, may be submitted to instructors during the final examination period only. It is the responsibility of the instructor to notify each student concerning the time and place for submitting take-home examinations. Exceptions to examination regulations may be granted by the appropriate college dean upon the recommendation of the concerned department chairperson.

Instructor Course Requirements

Prior to the end of the first full week of classes of a semester, each instructor shall distribute a written statement of his or her course requirements to all class members. This statement must include a specification of the number and types of course evaluations to be employed throughout the semester and a definition of course attendance policy. One copy of this statement is deposited with the instructor's department chairperson for information purposes.

Normally, a minimum of three evaluations of student progress (written or oral examination, written reports, recitations, laboratory techniques and reports, jury or performance evaluations) should be made in each course, at least one evaluation being required during each half semester. Upon the request of a student, an instructor is required to provide a statement of the student's course progress. Prior to the last date for withdrawing from courses, students who are in danger of receiving "D" or "F" grades either shall be so notified by the instructor or shall be in possession of such course evaluations as will permit such students to reasonably infer their course progress and academic jeopardy.

ATTENDANCE POLICIES

Although the University does not require class attendance as a matter of institutional policy, course instructors have the option of establishing required attendance in their courses and of specifying penalties for student violations of such attendance requirements. Colleges also have this option and sometimes have adopted attendance policies for introductory courses and specialized learning situations.

Instructor Attendance Policies

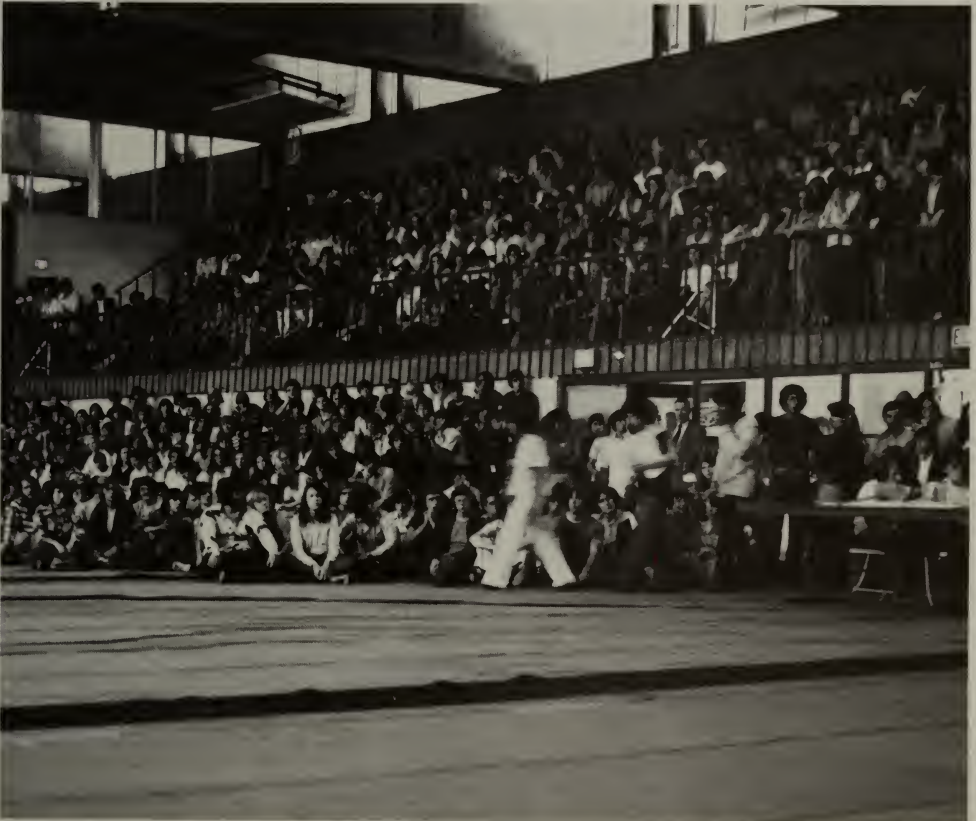
At the beginning of each course, the instructor will inform students of any specific attendance regulations which affect that particular course.

Attendance Requirements of the Veterans Administration

In compliance with the requirements of the Veterans Administration, all recipients of Veterans benefits, including eligible children of veterans, must certify their attendance at the University under penalty of perjury by the following procedures:

On the first Monday of each month, or on the following day if Monday is a holiday, each recipient of VA benefits is required to register his or her attendance at the office of the dean of his or her college. This procedure is also repeated on the third Monday, or on the following day if Monday is a holiday. All changes in status of the VA recipient also must be reported.

Failure to register attendance will be reported immediately by the College Dean to the Registrar, who will attempt to contact the student personally. If no satisfactory response is elicited for failure to register within one week of the reporting date, or if the Registrar is unable to reach the student at his or her official residence, the Registrar will inform the Office of the Veterans Administration that the University is unable to verify this student's attendance.





AEROSPACE STUDIES

DEPARTMENT OF AEROSPACE STUDIES

Lt. Col. Donald E. Sheehan, Chairperson

Professor: Donald E. Sheehan

Assistant Professors: Robert E. Dupre, Matthew F. Miga, Jr., Edgar S. Stinson

The Department of Aerospace Studies is a unit of the Office of Academic Affairs and offers courses in aerospace studies to all University students who can satisfy the special admission requirements. The Department also offers the Air Force ROTC program.

University Policies Concerning Aerospace Courses

Courses in aerospace studies may be counted as unrestricted elective courses in a student's baccalaureate program. Grades for these courses are applicable to the determination of grade-point averages. Students should consult the regulations of the college in which they are matriculating concerning the number of unrestricted elective courses which are permitted for their programs of study. In the event that such unrestricted elective courses are not permitted or are insufficient to accommodate the professional officer course for the junior and/or senior years, students wishing to pursue the AFROTC program will be required to fulfill program requirements on an overload basis.

The Air Force ROTC Program

The program is designed to qualify for commissions those men and women who desire to serve in the United States Air Force and to provide an education which will develop skills and attitudes of vital importance to professional Air Force officers. The Air Force ROTC program is divided into two phases: (1) the general military course and (2) the professional officer course.

Students may elect to enroll in the four-year AFROTC program or the two-year AFROTC program. Students electing the four-year program will take the general military course during their freshman and sophomore years and the professional officer course during their junior and senior years. They will attend four weeks of field training during the summer between the sophomore and junior years. As members of the program they are eligible to compete for AFROTC scholarships. For acceptance into the professional officer course, students enrolled in the four-year program must pass a physical examination, an officer qualification test, and possess an acceptable academic record. To qualify for enrollment in the two-year program, students must have two academic years remaining at either the graduate or undergraduate level or a combination of these levels. They must also meet certain physical standards, pass an officer qualification test, and possess an acceptable academic record. They must also successfully complete a six-week field training course before they can be accepted into the professional officer course. Transfer students may elect the professional officer course by satisfying the above requirements.

Uniforms, equipment, and textbooks which are required for AFROTC work are supplied by the University and the United States Air Force. Students in the professional officer course receive a monthly subsistence allowance of \$100. Competitive scholarships are available for a limited number of cadets in the program. Students who successfully complete the professional officer course are commissioned as second lieutenants in the United States Air Force Reserve and serve on active duty in the Air Force in a specialty which is as closely related to their academic training as is consistent with needs of the Air Force.

Corps Training

Corps Training is conducted one hour each week under the direction of the detachment officer staff. The general Military Course cadets learn the rudiments of marching and drill and the Professional Officer Course cadets develop their capability to plan, organize and supervise cadet activities. During periods of inclement weather, Corps Training is conducted indoors and consists of programs to familiarize cadets with the life and work of Air Force officers and the base environment in which they function. Experts in the fields of Defense Policy and other current affairs subjects also lecture in the AFROTC Enrichment Program to broaden the student's appreciation in these areas.

Field Training

Each cadet must attend field training during the summer before entry into the Professional Officer Course. Field Training is held at several Air Force operational bases each summer where cadets have the opportunity to observe, fly and live with career personnel. Transportation from the legal residence of the cadet to the Field Training Base and return, food, lodging and medical and dental care are provided by the Air Force. In addition, the cadets receive approximately \$360.00 for the four-week Field Training and \$490.00 for the six-week Field Training.

Field Trips

Periodically, the Department of Aerospace Studies conducts field trips to various Air Force installations which provide tours of the base and familiarization flights. Efforts are made also to assist those cadets who are interested in flying to gain as much information as possible about this phase of the Air Force.

Flight Instruction

The Flight Instruction Program (FIP), designed for seniors in the Professional Officer Course, who plan to enter Air Force pilot training upon graduation, determines whether applicants have the necessary qualifications to fly high-performance aircraft. The program consists of two phases. The ground phase, given by officers of the detachment, serves to familiarize each student with procedures in navigation, radio and weather. The flying phase consists of dual and solo flight instruction by a FAA certified civilian flying school at government expense.

Cadet Decorations and Awards

Medals and awards are presented to selected cadets at special ceremonies held each semester. These awards include the Disabled American Veterans Award, the Costello Trophy, American Legion Excellence Awards, and the Reserve Officer Association Medal.

FACULTY OF AEROSPACE STUDIES

Robert E. Dupre, Major, USAF, Assistant Professor, Aerospace Studies; B.S., Lowell Technological Institute; M.B.A., Western New England College.

Matthew F. Miga Jr., Captain, USAF, Assistant Professor, Aerospace Studies; B.S., Boston State College; M.A., Ball State University.

Donald E. Sheehan, Lt. Col., USAF, Professor, Aerospace Studies; B.S., U.S. Military Academy; M.A., University of Illinois.

Edgar S. Stinson, Major, USAF, Assistant Professor, Aerospace Studies; B.A., University of Colorado; M.S., University of Wisconsin-Madison.





COLLEGE OF LIBERAL ARTS

Patricia A. Goler, Dean

At its best, a liberal education involves the active pursuit of truth as well as a knowledge of ourselves as human beings and of the societies we have constructed. It recognizes and utilizes aesthetic quality and curiosity as inherent motives for human learning. It encourages students to achieve the confidence and to acquire the knowledge and skills necessary to face problems and to deal with them realistically, giving attention to their potential consequences for others as well as for themselves. A liberal education should enable students to comprehend, support, and/or criticize society by fostering freedom of thought, social interaction, and a willingness to make decisions based upon an objective evaluation of the situation as well as upon one's own considered personal values. It should result in orderly processes of thought, respect for relevant evidence, and a sense of obligation to test one's own generalizations. In short, it should prepare one to deal with a complex and rapidly changing environment from the special perspective of one's own chosen field.

OBJECTIVES OF THE COLLEGE OF LIBERAL ARTS

The broad objective of a liberal education to the modern world is to develop through the study of the social sciences and the humanities men and women who are open to change and to the challenges of an uncertain future. The liberal arts program in the University of Lowell recognizes the interdependence of human communities and the balance existing between these and the natural world, and it aims at building an understanding of our cultural and scientific heritage while developing the ability to use the concepts and skills of the academic disciplines in a critical and integrated way. Aside from the special vocational implications of the various disciplines, a liberal arts student should be one who can function freely, realistically, and creatively. Because of an awareness of his or her human and natural surroundings, a liberal arts student's life can be enriched by aesthetic sensitivity and intellectual curiosity. Finally, a liberally educated person should be well-disposed to continue learning, to develop increasingly meaningful goals, and to live a satisfying personal life in the years ahead. The College of Liberal Arts recognizes that the attainment of these skills and habits will be in great part the result of the student's personal motivation. For this reason, students are allowed considerable latitude in developing their programs of study in regular consultation with their faculty advisors.

COLLEGE ORGANIZATION & GOVERNANCE

The College of Liberal Arts is organized into seven departments and is administered by a dean, who is assisted by an advisory council. The seven departments and the Committee for American Studies are responsible for developing course offerings and programs of studies. Although the faculty of the College has overall responsibility for all academic policies of the College, the Academic Standards Committee is responsible for enforcing the academic standard of the liberal arts faculty and also serves as a review body for suspended students seeking readmission with probationary status.

Dean's Advisory Committee

Judith Anderson, English
Derek Beckwith, Student
Mary Blewett, History
Richard Derry, History
John Dufresne, Student
Joseph Garreau, Languages
William Hersey, English
David Landman, English
Joseph Lipchitz, History
John MacDougall, Sociology
John McCaffrey, English
Judith T. O'Brien, Psychology

Curriculum Committee

Peter Blewett, History
Veda Cobb-Stevens, Philosophy
Mitra Das, Sociology
Karen Farmer, Student
Bernard Lynch, Student
Gerard O'Connor, English
Brenda Pinardi, Art
Deborah Schildkraut, Psychology
Anne Struzziero, Student
Lynette Woods, Languages

Academic Standards Committee

Joyce Denning, Political Science
Richard Derry, History
Margaret Guindon, English
Marie O'Brien, Sociology
Joseph Waterman, Psychology

Promotion and Tenure Committee

Mario Aste, Languages
Leon Chorbajian, Sociology
Richard Derry, History
Robert Innis, Philosophy
Gerard O'Connor, English
Brenda Pinardi, Art
Janet Burke, Psychology

Workload Committee

Mario Aste, Languages
Charles Carroll, History
Liana Cheney, Art
Nancy Henley, Psychology
Robert Innis, Philosophy
Marie O'Brien, Sociology
Gerard O'Connor, English

BACCALAUREATE DEGREE PROGRAMS

The College of Liberal Arts offers undergraduate programs leading to the degree of Bachelor of Arts and Bachelor of Science. All degree programs of the College provide a broad, comprehensive education with many options for developing major and minor programs and ordinarily provide sufficient preparation for graduate programs which require students to possess a general liberal-arts background. Students who matriculate for the degree of Bachelor of Arts in the College may pursue majors in American studies, art, English, French, history, modern languages, philosophy, political science, psychology, sociology, and Spanish. Students who matriculate for the degree of Bachelor of Science in the College of Liberal Arts pursue the major program in the administration of law and justice. All degree programs consist of the following components:

Requirements	Credits
1. University Core Requirements*	33
2. Liberal Arts Major	30-45
3. Collateral Requirements +	<u>42-57</u>
Minimum Degree Credits	120

*Does not include physical activities courses, which may not be applied to the minimum degree requirement of 120 credits.

+May include specified collateral requirements of the major which are not completed as part of the University Core (including required related courses or minors), elective courses, optional minor programs, and second majors.

Students who are matriculating for degrees in the College of Liberal Arts are required to designate degree majors in the College. Students are not required to complete a minimum number of credits or courses in the College and are permitted to elect courses in other colleges of the University which are relevant to the academic orientations of their liberal arts programs. However, courses of a distinctly professional orientation are not applicable to programs of the College and, irrespective of any permissive regulation of another college, they may not be taken without the approval of the Dean of the College of Liberal Arts. Courses for which students can satisfy prerequisite requirements may be elected without the authorization of the Dean of the College of Liberal Arts in the College of Pure & Applied Sciences. Other courses which may be elected without the authorization of the Dean of the College include the economics offerings and the foundations of business electives of the College of Management Science, music history and literature courses of the College of Music, non-professional health and physical education courses (but not physical activities courses) of the College of Health Professions, and courses of the Department of Aerospace Studies. Foundations of education courses of the College of Education may be credited to programs of the College of Liberal Arts but are not open to students of the College except by permission of the Dean of the College of Education.

Options for second majors and minor studies are permitted as specified below.

1. Students may elect a second major which is offered by the College of Liberal Arts or, upon approval of the Dean of the College of Liberal Arts, they may elect a second major which is offered by other colleges of the University. A second major in American studies is not available as an option to English majors. Nor is a second major in English, history, political science, or sociology available as an option to American studies majors. Students who elect academic majors in more than one college are candidates for one degree only, and they are considered to be degree candidates in the college of their initial major unless they indicate to the contrary at the time they make a declaration of second major by filing for intercollegiate transfer. Accordingly, a student who pursues academic majors in the College of Liberal Arts and another college is subject to all degree requirements as specified by the college of his or her initial major and is subject only to major course requirements (including any collateral and prerequisite courses for the major) as specified by the department of his or her second major. The College of Liberal Arts does not participate in any dual degree program. For a full discussion of University requirements concerning second majors, students should consult the relevant section of this publication which appears under the heading "Academic Policies."
2. In accordance with the requirements of established minor programs, students who matriculate for degrees in the College of Liberal Arts may undertake a minor from those areas cited

below which are distinct from the disciplines comprising their majors. The Curriculum Committee of the College of Liberal Arts will from time to time review and, when appropriate, approve new minors in addition to those listed below. Students should consult with their advisors concerning additions to the approved listing of minors. Specific options for minor programs will depend on the major field which a student has elected to pursue and the collateral course requirements which have been specified by their major departments. Students are advised that an aggregation of courses which total 18 or more credits does not constitute a minor area and they are referred to University policies which appear elsewhere in this publication under the heading "Academic Policies: Minor Area Requirements" for further discussion. Additionally, students who wish to elect a minor program in colleges other than the College of Liberal Arts should refer to the appropriate section of this publication concerning prerequisites, restrictions, and prescribed sequences of courses.

American history	English	physics
American literature	English literature	political science
American studies	European history	psychology
art history	French	studio art
biology	geriatrics	social science
British history	Greek	psychology
chemistry	history	studio art
classical civilization	Latin American studies	social science
drama	mathematics	sociology
economics	music history and literature	Spanish
earth science	philosophy	women's studies

3. Upon the approval of their faculty advisors, matriculating students in the College of Liberal Arts may develop programs of elective courses for the purpose of providing greater personal and professional relevance to their major fields. Such programs may be developed from among those disciplines which are listed above as areas in which elective courses may be authorized for matriculating students of the College of Liberal Arts and, when presented in fulfillment of collateral degree requirements without a second major or a minor, must include at least 6 credits of courses which are on or above the "300" level.

GENERAL COLLEGE REQUIREMENTS

In order to qualify for a baccalaureate degree offered by the College of Liberal Arts, each undergraduate must comply with the University Core Requirements, must conform to the rules of the College of Liberal Arts which govern degrees and major studies for such degrees, and must earn a 2.20 average in his or her major area(s) of concentration by the end of the senior year. Students who have failed to achieve a 2.00 average in their major concentrations by the end of their junior year (typically 27 hours in the major of 89 hours undertaken by the end of the junior year) have not made satisfactory progress toward their degrees, and upon the recommendation of appropriate departmental committees and the concurrence of the Academic Standards Committee of the College, such students are dismissed from the University for inadequate scholarship.

Language Proficiency Requirement

Although the College of Liberal Arts does not require language proficiency, students who major in the administration of law and justice are required to demonstrate intermediate level proficiency in a foreign language, preferably Spanish; and English majors are required to evidence intermediate proficiency in French, German, Greek, Italian, Latin, or Spanish. Students majoring in American studies, philosophy, political science, psychology, and sociology who

anticipate further studies in their major fields at the graduate level are strongly advised to develop an intermediate reading proficiency in French or German. American studies and art majors who wish to pursue graduate training in related continental studies or in the area of art history should develop a reading proficiency at the intermediate course level in French, German, Italian, or Spanish. Political science and sociology majors are urged to develop an intermediate speaking proficiency in French or Spanish if they anticipate public-service careers. Students who are required to evidence intermediate proficiency as a collateral requirement of their major studies and students who desire to present official evidence of language proficiency for purposes of employment or application to graduate schools should consult policies listed elsewhere in this publication under the heading "Academic Policies: Language Requirement" for a listing of avenues by which certification of language proficiency may be pursued.

Declaration of Major and Change of Major

The College of Liberal Arts does not require students pursuing the Bachelor of Arts degree to declare their major fields until the end of their sophomore year. Students should consult policies listed elsewhere in this publication under the heading "Academic Policies: Major Field Requirements" for a complete discussion of declaration of major, declaration of second major, change of major within the college of enrollment, and changes of major with intercollegiate transfer.

Transfer Policies

Students transferring to the College of Liberal Arts from other colleges of the University or from other institutions may expect recognition of previously completed courses if these are equivalent to those which are specified by curricula of the College. Such courses of a professional nature as nursing, educational methods, and apprentice teaching which are not relevant to the academic orientation of liberal arts programs or to the specific orientation of the degree program in the administration of law and justice may not be credited to the minimum degree requirement of 120 credits and, irrespective of any previous recognition by the Office of Admissions or by other colleges of the University, they may not be credited to degree requirements in the College of Liberal Arts.

Transfer from Other Institutions

Courses which are transferred from other institutions are initially evaluated by the Office of Admissions in terms of general University requirements when a student is admitted to the University and are also evaluated by major departments in terms of college and program requirements at the time a student is accepted for matriculation by the College of Liberal Arts. Courses which are transferred to the University under provisions of the Massachusetts Transfer Compact and which are not creditable to requirements of the College of Liberal Arts or as unrestricted elective courses will be listed on the student's permanent

record card but will not apply to the minimum degree requirements. In the event that a student who has transferred to the University under the Massachusetts Transfer Compact subsequently makes an intercollegiate transfer to the College of Liberal Arts, all previously completed courses, including transferred courses from other institutions, will be reevaluated in terms of their applicability to degree requirements of the College of Liberal Arts.

The applicability of grades received in transferred courses for the determination of the grade-point average of the student's major at the University of Lowell is determined by policies of each of the colleges. The policy of the College of Liberal Arts is to count such grades for the purpose of determining the student's major grade-point average.

Repetition of Transferred Courses

A student who has been granted transfer credit, and on this basis has been assigned to advanced courses for which the transferred course is a prerequisite may be advised to repeat such transferred work at the University or to take a more elementary course than that which has been transferred when the competence of the student has been demonstrably inadequate. Permission to repeat a transferred course is granted by filing an academic petition form through the office of the college dean. Since credit may not be granted more than once for the completion of any course, a condition for filing such a petition is the simultaneous filing of a request to revoke recognition of the previously transferred course.

Intercollegiate Transfer to the College of Liberal Arts

Students wishing to transfer from another college of the University or from baccalaureate continuing-education programs of the Evening School must file a petition, together with a transcript of their permanent record cards, with the appropriate chairperson and the Dean of the College of Liberal Arts by November 1 for spring semester transfer and by April 1 for fall semester transfer. Students are referred to University policies concerning intercollegiate transfer which appear elsewhere in this publication under the heading "Academic Policies: Change of Major with Intercollegiate Transfer" for further procedural details. Records of students who are approved for transfer are reviewed by the Office of the Dean of the College of Liberal Arts and, irrespective of grades previously received in other college programs, all courses which may not be applied to college or program requirements are deleted from the student's cumulative grade-point average.

EDUCATION PROGRAMS

Students who major in American studies, art, English, French, history, psychology, sociology, or Spanish and who are interested in pursuing a professional major in elementary or secondary education must apply for admission to the College of Education. If admitted to these professional majors, these students matriculate for degrees in the College of Education and continue to pursue their academic majors in the College of Liberal Arts.

COMMITTEE FOR AMERICAN STUDIES

Charles Carroll, Chairperson

Professor: Charles Carroll (History & Political Science)

Associate Professors: Clifford Lewis (English), Mary Walsh (Psychology)

The Committee for American studies administers a major in American studies which leads to the Bachelor of Arts degree. The Committee also administers a minor area in American studies.

American Studies Major

American Studies allows the student who is searching for an understanding of interrelationships among ideas, institutions, and aesthetic forms to combine a number of scholarly disciplines in order to better comprehend the many facets of modern American culture. Although the core of the American studies program is not career oriented, the committee believes that students who combine a variety of disciplines will not only sharpen their analytical powers and increase their sense of self-fulfillment, but will, in the long run, be better prepared for positions in education, government, social services, business, and the professions. For students who are capable of analyzing American culture by combining the conceptual approaches of a variety of disciplines — the arts, history, literature, political science, psychology, economics, sociology — are capable of making decisions with some realization and awareness of the available alternatives. Many current problems involving family life, medical ethics, the status of women and minorities, technology, the environment, government power, and the influence of big business, require an interdisciplinary approach. The American studies program is a method by which students can obtain a broad liberal arts education. At the same time, the committee encourages students to elect career-oriented courses as free electives. Many American studies majors take a portion of their free elective courses in studio art, accounting, management, economics, mathematics, and computer programming. The American studies program is a good program for students who are unsure about their ultimate career choice, for it is extremely flexible and allows for changes in career direction — often without an accompanying loss of time and course credits.

Major Requirements

To fulfill the requirements for a major in American studies, individuals must take 30-45 semester credits (with at least 15 credits at the 300 or 400 levels) including the following courses:

1. 43-305-306: American Intellectual History, or
43-313-314: American Social History.
2. One interdisciplinary course chosen from the list below.
3. Two courses at the 200 level or above in one discipline.
4. Two courses at the 200 level or above in a second discipline.
5. 40-401: American Studies Seminar.

Students transferring to the College of Liberal Arts and wishing to major in American Studies must make individual arrangements with the Chairperson of the Committee regarding satisfaction of major and collateral course requirements.

Interdisciplinary Course Requirements

Students majoring in American studies must take at least one of the following courses. Each course integrates a number of academic disciplines in order to give the student an understanding of the many forces which shape American culture.

- 40/42-313: The Twenties
- 40/42-316: The Thirties
- 40/42-310: The West in American Literature
- 40/43-230: Colonial America: History and Culture
- 40/43-232: The Coming of the American Revolution
- 40/43-324: The Rise of American Industrial Society
- 40/43-270: Women in American History
- 40/43-301: The Gilded Age
- 40/43-302: Progressive America, 1900-1930
- 40/43-270: Children and Family in the United States

COURSES DEALING WITH IMPORTANT ASPECTS OF AMERICAN CULTURE

The following courses carry credit for students majoring in American Studies:

Art

- 58-221: Twentieth Century Art
- 58-313: American Art

Economics

- 64-202: Economics 11
- 64-301: Current Economic Problems
- 64-302: Labor Economics
- 64-303: Microeconomic Theory
- 64-304: Macroeconomic Theory
- 64-306: Urban Economics
- 64-307: Government and Business

Education

- 01-281: Man, Medicine, Morality
- 01-332: Contemporary Topics in American Education
- 01-333: History of American Education
- 01-342: Social Issues and Education
- 01-383: Education and Social Inequality
- 01-382: Social Organization of Schools and School Systems

English (American Literature)

- 42-231: Literature and Mass Media
- 42-233: Popular Culture
- 42-245: The Businessman In American Fiction
- 42-259: Protest Fiction in America
- 42-263: Modern American Drama
- 42-270: Contemporary American Fiction
- 42-274: Literature of the Beat

- 42-294: History of American Literature I
- 42-295: History of American Literature II
- 42-310: The West in American Literature
- 42-311: The South in American Literature
- 42-312: American Puritanism as a Literary Influence
- 42-313: Realism and Naturalism in American Fiction
- 42-314: The Twenties in America
- 42-315: The Thirties in America
- 42-316: History of American Literature III
- 42-331: American Novel to 1900
- 42-332: American Novel of the Twentieth Century
- 42-373: Epic Poetry in America
- 42-374: Contemporary American Poetry

Geography

- 88-126: Geography of the U.S. & Canada

History

- 43-202: Eminent Americans
- 43-205: Pre-Columbian America
- 43-230: Colonial America: History & Culture
- 43-232: Coming of the American Revolution
- 43-233: War for American Independence
- 43-234: Nationalism & Sectionalism
- 43-235: Civil War & Reconstruction
- 43-237: American Environmental History
- 43-238: American Foreign Relations to 1898
- 43-239: American Economic History

43-243: American Urban History I
 43-244: American Urban History II
 43-246: Afro-American History
 43-266: American Popular Culture
 43-268: Children & Family in the United States
 43-270: Women in American History
 43-277: Ethnic Groups in American Life
 43-280: Inter-American Relations
 43-286: U.S. and China
 43-301: The Gilded Age
 43-302: Progressive America, 1900-1930
 43-303: America Between the Wars, 1918-1941
 43-304: Recent U.S. History, 1940-Present
 43-305: American Intellectual History to 1890
 43-306: American Intellectual History since 1890
 43-307: American Culture & the Film
 43-308: History of Crime, Social Conflict & Control in U.S.
 43-313: American Social History to 1880
 43-314: American Social History since 1880
 43-315: New England History
 43-316: History of Lowell
 43-318: The American Frontier
 43-320: Contemporary American Foreign Policy
 43-322: American Political Parties
 43-324: The Rise of American Industrial Society
 43-328: The South: Slavery through Reconstruction
 43-336: Radicalism in American History
 43-341: The Thirties
 43-342: The Second World War
 43-343: Cold War Culture: America in the 50's
 43-365: The American Indian
 43-367: Contemporary Native Americans
 43-370: Technology in Early America
 43-371: Urban Crisis
 43-377: American Women thru their Fiction
 43-378: American Women thru Biography & Autobiography
 43-380: The Rebel Culture
 43-385: Slavery
 43-387: Humor & Satire in American Thought
 43-390: The Origins of the Cold War
 43-394: Martin Luther King & His Times

Music

74-162: Survey of American Music
 74-163: History of Jazz
 74-164: Black Music

74-466: Music of the 20th Century
 74-539: 18th & 19th Century American Music

Political Science

46-205: Constitutional Law & Civil Liberties
 46-206: Constitutional Law & Civil Rights
 46-238: American Political Thought
 46-245: Democratic Values in American Society
 46-250: Women, Power, and Politics
 46-256: Public Administration
 46-308: Women, Technology, & Political Change
 46-309: Political Socialization in America
 46-324: Political Behavior
 46-325: State, Urban & Local Politics
 46-339: American National Politics
 46-341: Politics of Dissent in America
 46-342: American Political Parties & Interest Groups
 46-343: The Congress
 46-344: The Presidency
 46-345: Judicial Review & Constitutional Development
 46-347: Liberty & Equality in America
 46-359: American Foreign Policy & Indochina

Psychology

47-209: Social Psychology
 47-264: Maturing and Aging
 47-308: Organizational Psychology
 47-328: Dynamics of Interpersonal Relations
 47-335: Psychology and Women
 47-344: Simulation of Social Experience
 47-355: Community Psychology
 47-364: Psychology of Crime and Corrections

Sociology

48-320: Drugs, Drug Use, and Social Policy
 48-334: The Study of Minorities
 48-335: The Black Experience in American Life
 48-341: Social Stratification
 48-345: Urban Sociology
 48-350: Social Service: Ideology and Reality
 48-351: The Sociology of Health and Health Care
 48-356: Political Sociology

Minor Requirements

A minor in American studies consists of 18-24 credits selected in accordance with the following specifications. At least 6 credits of courses must be taken at the 300 level or above.

- a. 43-305-306, American Intellectual History, or 43-313-314, American Social History;
- b. Three hours of designated "300" level interdisciplinary courses: and
- c. Nine to fifteen hours in other authorized American studies courses from three separate disciplines. (See listing following description of American studies major.)



DEPARTMENT OF ART

Brenda Pinardi, Chairperson

Associate Professors: Leo Panas, Brenda Pinardi, Carlton Plummer

Assistant Professors: Liana Cheney, Frederick Faudie, Robert Griffith

Instructor: Michael Costello

The Department of Art offers two options for art majors which lead to the Bachelor of Arts degree and minor programs in art history and studio art.

Art Major

A major in art enables students to prepare for careers in fine arts, commercial art, community oriented programs, gallery work, museum research, photography related occupations, and teaching, and for graduate programs in art history, art education, and studio art.

Major Requirements: Option I (General Art Program)

This option is general in nature and includes courses in both studio art and in art history and is sufficiently flexible to permit students who have a desire to major in another area to do so. By pursuing a degree program which includes majors in both art and a second discipline, the student can prepare for a variety of professions and can tailor his or her studies to prepare for such specialized graduate work as art therapy. A major in art which is taken under this option consists of 36-45 credits and must include at least five courses (15 credits) at the 300 level or above plus the following requirements:

1. Four Art History Courses (12 credits)
Appreciation of the Visual Arts*, Survey of Art, and two art history electives;
2. Five Studio Art Courses (15 credits)
Drawing I*, Design I*, Painting I, Photography I, and Graphics; and
3. Art Electives (9-18 credits)
Electives in studio art or in art history

*All art majors must take Appreciation of the Visual Arts, Drawing I, and Design I prior to enrolling in other art courses.

Major Requirements: Option II (Studio Art Program)

This option is designed for students who seek both knowledge of the basic art processes and an opportunity to develop skills in one of the following studio art areas: commercial art, drawing and painting, or three-dimensional art. By pursuing an art major under this option, the student can prepare for specific art careers and for graduate study in studio art. In addition to satisfying the requirements for the studio major, students who pursue this option are also required to complete requirements for a minor in art history. These combined studies cannot exceed 63 credits unless the student presents an additional number of credits beyond the 120 credit minimum for the Bachelor of Arts degree which is equal to the number of credits by which he or she exceeds the specified 63 credit maximum and a minimum of 57 credits is presented in non-art courses.

The major in studio art which is taken under this option consists of 36-45 credits and must include at least five courses (15 credits) at the 300 level or above plus the following requirements:

1. Six Studio Art Courses (18 credits)
Drawing I+, Design I, Three Dimensional Design, Painting I, Photography I, and Graphics;
2. Four Approved Courses in One of the Following Areas of Studio Emphasis (12 credits)
 - a. Commercial Art
 - b. Drawing and Painting
 - c. Three Dimensional Art; and
3. Studio Art Electives (6-15 credits).

The required minor in art history consists of 18-24 credits and must include at least six credits at the 300 level or above plus the following requirements:

1. Two Art History Courses (6 credits)
Appreciation of the Visual Arts+ and Survey of Art;
2. Art History Electives (12-18 credits).

+All art majors must take Appreciation of the Visual Arts, Drawing I, and Design I prior to enrolling in other art courses.

Students transferring art credits to the Department and wishing to major in art must make individual arrangements with the Chairperson regarding satisfaction of major course requirements. Students must present during their interviews a portfolio or slides of representative samples of work which they executed at their previous institution.

Minor Requirements

A minor in art history consists of 18-24 credit hours selected in accordance with the following specifications. At least one course must be completed in studio art and no fewer than 6 credit hours of the minor must be taken at the 300 level or above.

A minor in studio art consists of 18-24 credits in studio art courses. At least one course must be selected in art history and no fewer than 6 credits of the minor must be taken at the 300 level or above.

Registration for Art Courses

The Department of Art reserves the right to preregister its major students in order to assure completion of their degree requirements. In the event of over-subscription of art courses by art majors, the Department will grant first preference to seniors and second preference to juniors.

Policies Concerning Student Work

The Department of Art reserves the right to keep student work for a period not exceeding one year for inclusion in exhibitions, etc. All work will be returned. etc. All work will be returned.

The Department reserves the right either to photograph student work for its slide collection or, in the case of photography and printmaking courses (where many copies can be made) to keep actual examples of work.

Unless otherwise specified, art work and term papers left for more than one semester following the semester in which they were completed become the property of the Department to do with as it sees fit.



DEPARTMENT OF ENGLISH

Gerard W. O'Connor, Chairperson

Professors: William C. Burto, Robert Foy, Charles Jarvis, Howard Moore, Gerard O'Connor, Robert Stein, Roger Wiehe, Joseph Zaitchik

Associate Professors: William Aiken, Oliver Ford, Herbert Haber, Kalervo Kansanniva, Clifford Lewis, John Riley

Assistant Professors: Judith Anderson, Donald Berry, Andrea Corbett, Arthur Davilis, Robert DeYoung, Richard Forster, Arthur Friedman, Margaret Guindon, William Hersey, Lester Hudson, Marianne Knowlton, Mary Kramer, David Landman, John McCaffrey, Martha McGowan, Barbara Miliaras, William Roberts, Charles Ryan, Gardner Tillson, Anthony Turrisi

The Department of English offers a major in English which leads to the Bachelor of Arts degree. The Department also offers a general minor in English and specialized minors in English literature, American literature, and drama.

English Major

The major in English provides students with a broad, liberal arts education, encompassing specified course work in classical, English, and American literatures, language analysis, writing, and the methods of literary study.

Major Requirements

The English major consists of 30-45 credits (with at least 15 credits at the 300 course level or higher) and must include the following:

1. 42-201: Great Books of Antiquity
2. 42-285: Introduction to Semantics, or:
42-289: Analysis of Modern English, or:
42-307: History and Development of the English Language
3. 42-291: History of English Literature I
4. 42-292: History of English Literature II
5. 42-293: History of American Literature I
6. 42-294: History of American Literature II
7. 42-297: Methods of Literary Study
8. 42-423: Shakespeare I, or:
42-424: Shakespeare II

In addition, English majors must select a total of two courses, one each from two of the following categories:

- I. Medieval and Renaissance
- II. Restoration and Neoclassical
- III. Romantic and Victorian

Courses for categories I, II, and III must be selected from offerings on the 300 and 400 levels. The remaining courses for the concentration may be selected from any of the Department's offerings except that no more than two courses on the 200 level (in addition to those which are required) may be counted. Intermediate foreign language proficiency is required of all English concentrators.

Students wishing to major in English who are changing from other programs within the University or who are transferring to the University must make individual arrangements with the Department Chairperson regarding satisfaction of major and collateral course requirements.

Minor Requirements

American Literature

A minor in American literature consists of 18-24 credits selected in accordance with the following specifications. At least 6 credits of courses must be taken at the 300 level or above.

- a. 42-293: History of American Literature I
- b. 42-294: History of American Literature II
- c. 42-291: History of English Literature I; or
42-292: History of English Literature II
- d. Electives in American Literature.

Drama

A minor in drama consists of 18-24 credits selected in accordance with the following specifications. At least 6 credits of courses must be taken at the 300 level or above.

- a. 42-218: Comedy
- b. 42-219: Tragedy
- c. 42-423: Shakespeare
- d. 42-424: Shakespeare
- e. Electives in drama
- f. Electives in stagecraft or acting

English (General English Minor)

A minor area of study consists of 18-24 credits of course work selected in accordance with the following specifications and including 6 credits of courses which are numbered 300 level or above.

- a. 42-291: History of English Literature I
- b. 42-292: History of English Literature II
- c. 42-423: Shakespeare or 42-424: Shakespeare
- d. One course in American literature
- e. English electives

English Literature

A minor area of study consists of 18-24 credits of course work selected in accordance with the following specifications and including 6 credits of courses which are numbered 300 level or above.

- a. 42-291: History of English Literature I
- b. 42-292: History of English Literature II
- c. 42-423: Shakespeare or 42-424: Shakespeare
- d. Electives in English literature

DEPARTMENT OF HISTORY & POLITICAL SCIENCE

Richard Derry, Chairperson

Professors: Christos Bentas, Mary Blewett, Charles Carroll, John Duff, Patricia Goler, Joseph Lipchitz, Francis Walsh

Associate Professors: Harold Bakken, Peter Blewett, Richard Derry, Donald Mattheison, Frederick Norton, Joan Rothschild, John Shea

Assistant Professors: Dean Bergeron, Joyce Denning, June Gonsalves, Renee Kasinsky, Frederick Lewis, Jonathan Liebowitz, Alan Lincoln, George Luter, Avalon Minton, H. B. Pho, William Nowlin, Miriam Price, Roger Schinness

The Department of History & Political Science offers a major in the administration of law and justice which leads to the Bachelor of Science degree and majors in history and in political science leading to the Bachelor of Arts degree. The Department also offers minor programs in American history, British history, European history, history, political science and (in cooperation with other departments) classical civilization, Latin American studies, social sciences, and women's studies.

Administration of Law & Justice Major (Criminal Justice)

The Administration of Law and Justice major is offered by the Department of History and Political Science and leads to the degree of Bachelor of Science. This major provides a strong academic background for those students seeking careers in the field of law enforcement administration within the broader framework of a traditional liberal arts education. Thus, courses in the major deal not only with theory but also with police work, the courts and corrections system, and management problems and techniques in criminal justice.

Major Requirements

The major in the administration of law and justice consists of 36-45 credits (with at least 15 credits at the 300 course level or above) plus the following:

1. Required Courses (18 credits)

- 44-101: The Criminal Justice System*
- 46-131: Introduction to Law and the Legal System.
- 44-221: Criminology I
- 44-390: Research Methods in Criminal Justice Research
- 44-490: Research Seminar in Criminal Justice
- 44-496: Practicum (Field Experience)

*The Criminal Justice System is a prerequisite for all other courses in the major.

2. Elective Courses (18 credits)

- 57-261: Photography I
- 43-243: American Urban History I
- 43-244: American Urban History II
- 43-245: History of Crime, Social Control and Conflict in the U.S.
- 46-205: Constitutional Law and Civil Liberties
- 46-206: Constitutional Law and Civil Rights
- 46-245: Democratic Values in American Society
- 46-250: Introduction to Public Administration
- 46-372: Alternative Social Organizations
- 47-209: Social Psychology
- 47-232: Psychology of Personality

- 47-355: Community Psychology
- 47-364: Psychology of Crime and Correction
- 48-231: Sociology of the Family
- 48-320: Drugs, Drug Use and Social Policy
- 48-345: Urban Sociology
- 48-350: Social Service
- 48-371: Sociology of Law and the Criminal Justice System
- 48-480: Seminar: Sociology of Law
- 64-306: Urban Economics
- 92-209: Introduction to the Theory of Computer Programming
- 92-219: Elementary Computer Programming

Intermediate language proficiency in a foreign language (preferably in Spanish) is required of all majors.

Students who transfer to the administration of law and justice major or to the College of Liberal Arts with the intention of subsequently declaring this major must make individual arrangements with the Program Coordinator regarding satisfaction of major and collateral course requirements.

History Major

A major in history provides students with a broad introduction to civilizations of the past and present, including those of antiquity, Europe, America, and the Third World, plus a thorough grounding in the historical process. Through a broad exposure to the complexities shaping the forces of civilization, the history major gains a special perspective by which he or she can view human thought and action while also developing his or her ability to determine bias, to make valid generalizations, to draw valid inferences, and to perceive the significance of fact within the framework of interpretations. The history major provides a meaningful background for those students who desire to enter government service, politics, law, teaching, and business.

Major Requirements

The major in history consists of 36-45 credits (with at least 15 credits at the 300 course level or above) and must include the following:

- 43-105: Western Civilization to 1715, and
- 43-106: Western Civilization since 1715
- or
- 43-107: World Civilization I, and
- 43-108: World Civilization II
- plus
- 43-296: Introduction to Historical Method
- 43-432: Research Seminar in History

The Department also requires one course in the Third World*, two courses on or above the 200 level in both European and American History, and two additional courses in either European or American history. The remaining courses for the major may be selected from history course offerings.

*Third world courses. All courses dealing with Asian, African or Latin American history, plus the following courses: 43-246: Afro-American History; 43-365: The American Indian; 43-366: Colonialism and the Third World; 43-367: Contemporary Native Americans.

Students transferring to the College who wish to major in history must make individual arrangements with the Chairperson of the Department regarding satisfaction of major requirements.

Political Science Major

The major in political science is designed to provide a knowledge of the functions and theories of the state and the nature, problems, and development of politics and government on the local, national, and international levels. The courses are designed to help the student develop an understanding of the political process and an ability to analyze political systems, relationships, and problems. Pragmatically, the major affords preparation for social science teaching, graduate education, law school, public administration, public service, and intelligent citizenship. Pre-law students and others may be interested in the several courses which are offered in the area of legal-political studies.

Major Requirements

A major in political science consists of 33-45 credits (with at least 15 credits at the 300 course level or above) and must include the following:

1. 46-101: Introduction to American Politics
2. 46-201: Introduction to Political Analysis
3. A substantial research project, produced in connection with a "400" level seminar course for which at least 3 credits are given.
4. A substantial Practicum Project involving first-hand experience with political life and relationships for which at least 3 credits at the "400" level can be given. Students in teacher-education programs are exempted from this requirement.

The Department also requires at least one course in each of the following sub-areas: (1) American Politics and Law, (2) Comparative and International Politics, (3) Political Thought and Theory. The Department recommends that political science concentrators select supporting course work from economics, history, and sociology and encourages students to develop minor areas of study or supporting concentrations in related social science disciplines.

Students transferring to the College and wishing to major in political science must make individual arrangements with the Chairperson of the Department of History & Political Science regarding satisfaction of major course requirements.

Minor Requirements

American History

A minor in American history consists of 18-24 credits. At least 6 credits must be taken in courses at the 300 level or above. Course work is selected in consultation with the faculty advisor.

British History

A minor in British history consists of 18-24 credits in the history of England and the British Empire-Commonwealth with at least 6 credits at the 300 level or above.

Classical Civilization

Course work for a minor area of study in classical civilization is selected in consultation with Dr. Bentas from the following disciplines: art, classics, English, history, Greek, Latin, and philosophy. Course work for the classical civilization minor must be distributed in three areas with at least 9 hours in one area, 6 hours in a second area, and 3 hours in a third area. Although courses in Latin or Greek are not required for the minor, students are urged to complete at least 6 hours of the minor in a classical language at the intermediate level. At least 6 hours must be taken in course work at the 300 level or above.

European History

A minor in European history consists of 18-24 credits. At least 6 credits must be taken in courses at the 300 level or above. Course work is selected in consultation with the faculty advisor.

History (General History Minor)

A minor in history consists of 18-24 credits. At least 6 credits must be taken in courses at the 300 level or above. Course work is selected in consultation with the faculty advisor.

Latin American Studies

An interdisciplinary minor in Latin American studies consists of 18-24 credits of course work. Six credits at the 200 level or above are required for the Spanish language component. Additional courses to complete the required credits may be elected from the appropriate courses offered by the Department of History and the Department of Economics:

- 43-205: Pre-Columbian America
- 43-206: Latin American Civilization
- 43-245: Mexico and the Caribbean
- 43-309: Cultural History of Latin America
- 43-312: Contemporary Latin America
- 64-319: Topics in Latin American Economic Problems

At least six credits must be taken in course work at the 300 level or above.

Political Science

Political science as a minor area of study consists of 18-24 credits of course work. At least 6 credits must be taken in course work at the 300 level or above. Course work is selected by the student in consultation with his advisor. Students who desire to make the most effective use of a minor in political science in pursuing specific career objectives in occupational areas such as (1) law, (2) foreign service, (3) business, management, and public service should consult with the political science faculty in choosing courses which are most appropriate as preparation for such career objectives. The faculty of political science offers several courses in the area of legal-political studies which may be of interest to pre-law students and others.

Social Science

Course work for a minor in social science must be selected from three of the following sub-areas: economics, geography, political science, and sociology. At least 9 credits must be in one area, 6 credits in a second area, and 3 credits in a third area. History concentrators should note that they may not count history courses for the social science minor. Similarly, political science courses may not be counted for the minor by political science concentrators. At least 6 credits must be taken in course work at the 300 level or above.

Women's Studies

A minor in women's studies consists of 18-24 credits in cross-cultural and interdisciplinary courses, six credits of which must be at the 300 level or above. Women's studies affords an opportunity to develop an understanding of the specific problems of the status and conditions of women as well as to become familiar with the various tools of analysis for understanding human behavior. Courses approved for the minor in women's studies are listed below.

- 42-240: Literature and Women
- 42-241: Women in Film
- 42-242: The Heroine in Modern Fiction
- 42-243: Contemporary Women Writers
- 42-345: Female British Novelists
- 43-268: Children and Family in the United States
- 43-270: Women in American History
- 43-274: The Family in Western Society
- 43-375: The Lives of American Women Through Their Fiction
- 43-378: The Experience of American Women in Autobiography and Biography
- 46-250: Women, Power and Politics
- 46-308: Women, Technology and Political Change
- 47-355: Psychology and Women
- 47-473: Social Psychology and Women
- 48-231: Sociology of the Family
- 48-241: Sociology of Sex Roles
- 48-461: Seminar: Topics on Men and Women in Society
- 53-340: Women and Art
- 64-320: Role of Women in the American Economy
- 82-351: Human Sexuality

DEPARTMENT OF LANGUAGES

Mario Aste, Chairperson
Professor: Joseph Garreau
Associate Professors: Mario Aste, Robert Bousquet, John Mendicoa
Assistant Professors: Enrique Cuan, Edith Hancock, Jesus Hernandez, William Mulcahey, Her-
linda Saitz, Robert Whelan
Instructor: Lynnette Woods

The Department of Languages offers minors in French, modern languages, and Spanish leading to the Bachelor of Arts degree. Also offered are minors in French, Greek, Italian studies, Spanish, and (in cooperation with other depart-
ments) classical civilization, and Latin American studies.

French Major

The French major provides a broad liberal arts education for students interested in developing a proficiency in the French language, a general knowledge of the cultural and literary heritage of French civilization, and a basic insight into the function of verbal symbols in the process of human thought. This major provides students with sufficient preparation for a career in language teaching and bi-lingual education.

The hallmark of the French major is its total-immersion program—an inte-
grated one-semester, full-time program designed to bring students to the point where they can communicate in French in a shorter period of time than in a traditional program and to insure a continuing high level of student motivation and success. The program is given early in the student's career so that he or she will be better prepared linguistically to pursue upper-level courses. Qualified students may take individual courses within the total-immersion program only with the permission of the Chairperson.

Major Requirements

A major in French consists of 33-45 credits (with at least 15 credits at the 300 course level or above) and normally will include a combination of 18 credits in language and 15 credits in literature courses.

Freshman Year	Junior Year
50-231: French Oral Expression I	50-302: Enlightenment & Romanticism
50-232: French Oral Expression II	50-303: From Realism to Present
Sophomore Year	"400": Elective
50-244: Advanced French Grammar	Senior Year
50-242: Phonetics and Diction	"400": Elective
50-246: Advanced French Conversation	
50-348: Advanced French Composition	
50-249: French Through Light and Sound	
50-301: Middle Ages, Renaissance, & Classicism	

Students who are admitted to the College of Education with a professional major in secondary education must also take 50-372: Applied Linguistics.

Additional course work beyond the prescribed courses may be elected from the French offerings of the Department to a maximum of 45 credits. French-prefix courses (50) given in English may be taken by French concentrators but may not be credited toward the major.

Students transferring to the College who wish to major in French must make individual arrangements with the Chairperson of the Department regarding satisfaction of major and collateral course requirements.

Modern Languages Major

The major in modern languages provides varied options for students who are interested in languages, not only from the viewpoint of a possible marketable skill, but also as a means of communication with people who speak a language which is different from their own.

Major Requirements

The modern language major consists of 36-45 credits above the 100 course level (with at least 15 credits at the 300 course level or above) and includes the following options:

Option I (French and Spanish)

Typically, the student earns 24 credits in one language and 12 credits in the other. He or she may also elect a program with 18 credits in each language.

Option II (French or Spanish plus an Additional Modern Language (Italian or German))

Typically, the student earns 24 credits in French or Spanish and 12 credits in the additional language. He or she may also elect a program of 18 credits in each language.

Students who transfer to the College and who wish to major in modern languages must make individual arrangements with the Chairperson regarding satisfaction of major requirements.

Spanish Major

A major in Spanish provides a broad liberal arts education for students who are interested in developing a proficiency in the Spanish language, a broad knowledge of the cultural and literary heritage of Spanish and Latin American civilization, and a basic insight into the function of verbal symbols in the process of human thought. This major provides students with sufficient preparation for a career in language teaching and bi-lingual education and for business and social service careers requiring a command of the Spanish language. A student may combine the Spanish concentration with other supporting studies and may tailor his undergraduate program to meet his individual career objectives. Especially attractive options are (1) Spanish and elementary education for students who wish to qualify for employment in bi-lingual education and (2) Spanish and sociology for students who wish public service in government agencies.

The hallmark of the Spanish major is its total-immersion program, which is an integrated, one-semester, full-time program designed to bring students to the point where they can communicate in Spanish in a shorter period of time than in

a traditional program to insure a continuing high level of student motivation and success. The program is given early in the student's college career so that he or she will be better prepared linguistically to pursue upper-level courses. Qualified students may take individual courses within the total-immersion program only with the permission of the Department Chairperson.

Major Requirements

The major in Spanish consists of 33-45 credits (with at least 15 credits at the 300 level or above) and normally will include 18 credits in language courses and 15 credits in literature courses.

Language Courses*

54-231: Spanish Oral Expression I

54-232: Spanish Oral Expression II, and must include

54-245: Advanced Spanish Conversation

54-347: Advanced Spanish Composition

Electives

*In special circumstances 3 credits in 54-221, 222, Reading and Conversing in Spanish I, II, may be counted as part of the above 18 credits with the permission of the Chairman of the Department. In exceptional cases, 3 credits in 54-313: Fieldwork in the Spanish Community, may be counted as part of the 18 credits of language courses with the approval of the Department Chairperson.

Students who have been admitted to the College of Education and pursue the program in secondary education and Spanish must also take 54-372: Applied Linguistics.

Additional course work beyond the prescribed courses may be elected from the Spanish offerings of the Department to a maximum of 45 credits. Additional courses beyond this number shall increase by an equal number the minimum credits which are required for the Bachelor of Arts degree.

Students transferring to the College of Liberal Arts who wish to major in Spanish must make individual arrangements with the Department Chairperson regarding satisfaction of major and collateral course requirements.

Minor Requirements

French

A minor area of study consists of 18-24 credits, with at least 6 credits at the 300 or 400 levels. Beginning courses in French at the 100 level may not be credited to the French minor.

Greek

A minor area of studies in Greek consists of 18 semester credits of course work and must include the following: 53-101-102: Beginning Greek, 53-301-302: Greek Classics, and 53-303-304: Selected Greek Authors. Unlike other modern languages, Greek has enjoyed a continuous tradition since antiquity and no break, like that between Latin and the Romance languages, separates the language of the ancients from the moderns. Educated Greek speakers have always had present in their minds the whole of the language up to their own time. Hence courses for the Greek minor include literature from all periods — from Homer and Plato to Kazantzakis.

Italian Studies

The interdisciplinary minor in Italian Studies consists of 18-24 credits of course work. Six credits at the 200 level or above are required for the Italian language component. Additional courses to complete the required credits may be selected from the following list:

- 43-213: Renaissance and Reformation
- 43-277: Ethnic groups in American Life
- 52-371: Dante's Divine Comedy
- 52-373: Petrarch and Boccaccio: A Study in Humanism
- 52-376: Pirandello: Theater and Influence
- 52-378: 20th Century Italian Literature: Moravia to Fellini
- 58-321: Italian Renaissance Art
- 58-322: Baroque Art in Italy

At least six credits must be taken in course work at the 300 level or above. Beginning Italian I and II may be counted toward the 24 credit program but may not be counted toward an 18 credit program.

Spanish

A minor in Spanish consists of 18-24 credits with at least 6 credits at the 300 or 400 levels. Beginning courses in Spanish at the 100 level may not be credited to the Spanish minor. Students who are interested in the application of Spanish to the health professions should take 54-313: Fieldwork in the Spanish Community.



DEPARTMENT OF PHILOSOPHY

Robert Innis, Chairperson

Professors: Robert Innis, Paul C. Smith

Assistant Professor: Veda Cobb-Stevens

The Department of Philosophy offers a major in philosophy which leads to the Bachelor of Arts degree. The Department also offers a minor in philosophy.

Philosophy Major

The major in philosophy is designed to serve the needs of four types of students: (1) those who seek a liberal arts education as a terminal program; (2) those who are preparing for professional graduate schools, e.g. education, law, theology, and medical schools which approve an undergraduate philosophy major; (3) those who desire to enter elementary teaching after receiving a basic foundation in philosophical studies; and (4) those who are preparing for graduate work in philosophy. Regardless of the goals which undergraduates may have set for themselves, a major in philosophy should be of value to all who question the reasons for things as they are, to those who seek a deeper understanding of what they are doing and for what purpose they are doing it, and to those who recognize the validity of Socrates' assertion that "the unquestioned life is not worth living."

Major Requirements

A major in philosophy consists of 30-45 credits (with at least 15 credits at the 300 level or above). The Department does not specify particular course work for the major but recommends that the sequence of courses be designed in close consultation with the student's faculty advisor. Students who plan to go to graduate school are encouraged to take a second major in a cognate field, e.g. American Studies, English, French, history, mathematics, political science, or Spanish.

Students transferring to the College and wishing to major in philosophy must make individual arrangements with the Chairperson of the Department of Philosophy regarding satisfaction of major course requirements.

Philosophy Minor

A minor area of study consists of 18-24 credits of course work in philosophy. At least 6 credits must be selected from courses which are numbered 300 or above.

DEPARTMENT OF PSYCHOLOGY

Janet Burke, Chairperson

Professors: Nancy Henley, Allie Scruggs

Associate Professors: Janet Burke, Jon Hellstedt, Marc Rondeau, Richard Siegel, Phyllis Sweet, Mary Walsh, Joseph Waterman

Assistant Professors: Kathleen Hulbert, David Landrigan, Charlotte Mandell, Charles Nikitopoulos, Judith O'Brien, Deborah Schildkraut, Gloria Seeman, Linda Silka

The Department offers a major which leads to the Bachelor of Arts degree and also offers a minor area of studies.

Psychology Major

The major in psychology should be of value to students interested in the study of human and animal behavior and is intended to augment a student's general liberal arts education as well as to provide the basis for specialized professional and graduate training for careers in mental health, special education, experimental research, social work, and teaching. The major stresses the importance of familiarity with the scientific methods of psychology, while also providing students with a solid background in the major sub-fields of psychology (experimental-physiological, developmental, social-community, personality-clinical) as well as the opportunity for advanced in-depth study in specialized areas. Students are also encouraged to become involved in University or Lowell community programs or in projects of supervised independent research, and the Department offers special awards to graduating seniors who have made outstanding achievements in these activities.

Major Requirements

The major in psychology consists of 30-45 credits (with at least 15 credits at the 300 level or above) and must include the following courses:

1. Each of the following courses:

47-111: Principles of Psychology I

47-112: Principles of Psychology II*

47-269: Research Methods

*Students transferring into the psychology major who have already completed a one-semester general psychology course (at U. Lowell or elsewhere) may petition the Chairperson of the Department for a waiver of the 47-112 requirement.

2. One course in each of the following four areas:

- a. Developmental Psychology

47-261: Child Psychology

47-262: Adolescent Psychology

47-264: Maturity and Aging

(Please note: 47-163, The Human Lifespan, is for non-majors only and may not be used to fulfill this area requirement.)

- b. Social-Community Psychology

47-209: Social Psychology

47-328: Dynamics of Interpersonal Relations

47-335: Psychology and Women

47-355: Community Psychology

- c. Personality-Clinical Psychology
 - 47-232: Psychology of Personality
 - 47-272: Abnormal Psychology
- d. Experimental Psychology (including lab)
 - 47-375: Experimental Psychology/Learning
 - 47-377: Experimental Psychology/Motivation
 - 47-376: Experimental Psychology/Sensation and Perception
 - 47-378: Experimental Psychology/Social Behavior

- 3. Two courses at the "400" level, not including Directed Study or Advanced Tutorial, not more than one of which may be 47-495, Field Practicum.
- 4. The remaining one to six courses of the major may be elected from any of the course offerings in psychology, except that at least 15 credits of the 30-45 required in the major must be at the "300" or "400" level.

Students transferring to the College and wishing to major in psychology must make individual arrangements with the Chairperson of the Department regarding satisfaction of major and collateral course requirements.

Minor Requirements.

A minor area of study consists of 18-24 credits of course work. At least 6 credits must be taken in course work at the 300 level or above in fulfilling the requirements for this minor area, the three credit hours granted 82-351: Human Sexuality may count as part of minor area requirements.



DEPARTMENT OF SOCIOLOGY

Leon Chorbajian, Chairperson

Professor: Shirley Kolack

Associate Professor: Carol Brown

Assistant Professors: Leon Chorbajian, Mitra Das, William Harrison, John MacDougall, Marie O'Brien, Frederick Sperounis

The Department of Sociology offers a major leading to the Bachelor of Arts degree and also a minor area of studies.

Sociology Major

The major in sociology offers students the opportunity to understand the nature of social life in our own and in other societies. It provides a unique perspective from which to gain a systematic view of material in a large number of different fields. Courses within the Department therefore cover a wide range of fields and encompass such topics as other-world cultures, ethnic cultures, the dynamics of social policy, relationships between the sexes, the nature of industrial capitalism, and the impact of technology on modern society. Students are encouraged to do work in the Lowell area as part of their sociology program. A prevalent value within the Department is the search for meaningful social change. Students who are interested in social work, law, teaching, or full-time academic work might consider a major in sociology.

Major Requirements

A major in sociology consists of 30-45 credits (with at least 15 credits at the 300 or 400 levels) and must include the following:

1. 48-101: Introduction to Sociology
2. 48-321: Social Theory
3. 48-402: Sociological Research
4. One other 400 level course

Students transferring to the College and wishing to major in sociology must make individual arrangements with the Department Chairperson regarding satisfaction of major course requirements.

Sociology Minor

A minor area of study consists of 18-24 credits of course work in sociology. At least 6 credits must be taken in course work at the 300 level or above.

FACULTY OF THE COLLEGE OF LIBERAL ARTS

DEAN OF THE COLLEGE

Patricia A. Goler, A.B.; A.M.; Ph.D.; L.L.D. (Hon.); D.H.L. (Hon.)

CHAIRPERSONS

Department Chairpersons

Mario Aste, A.B.; A.M.; Ph.D.; Languages

Janet Burke, B.S.; M.Ed.; Ph.D.; Psychology

Leon Chorbajian, Acting Chairperson, A.B.; M.A.; Ph.D.; Sociology

Richard Derry, A.B.; A.M.; History and Political Science

Robert Innis, A.B.; S.T.B.; A.M.; Ph.D.; Philosophy

Gerard W. O'Connor, A.B.; A.M.; Ph.D.; English

Brenda Pinardi, B.S.Ed.; M.F.A.; Art

Interdisciplinary Committee Chairperson

Charles F. Carroll, A.B.; A.M.; Ph.D.; American Studies

RESIDENT FACULTY

William M. Aiken, Associate Professor, English; B.A., Trinity College; A.M., Harvard University; Ph.D., Boston University.

Judith Anderson, Assistant Professor, English; A.B., Rutgers University; A.M., Radcliffe College; Ph.D., Harvard University.

Mario Aste, Associate Professor, Languages; A.B., University of Turin; A.M., Ph.D., Catholic University.

Harald C. Bakken, Assistant Professor, History; A.B., University of Minnesota; A.M., Ph.D., Harvard University.

Christos J. Bentas, Professor, History & Classics; A.B., Ed.M., Boston University; A.M., Ph.D., Tufts University.

Dean J. Bergeron, Assistant Professor, History; A.B., St. Michael's College; A.M., Villanova University.

Donald R. Berry, Assistant Professor, English; B.A., M.A., Baylor University.

Mary Blewett, Professor, History; A.B., A.M., Ph.D., University of Missouri.

Peter Blewett, Associate Professor, History; A.B., Northeastern University; A.M., Ph.D., Boston College.

Robert Bousquet, Associate Professor, French; A.B., M.Mus., Catholic University; Ph.D., Georgetown University.

Carol Brown, Associate Professor, Sociology; B.A., Bucknell University; M.A., Ph.D., Columbia University.

Janet Burke, Associate Professor, Psychology; B.S., M.Ed., Ph.D., Boston College.

William C. Burto, Commonwealth Professor, English; A.B., Colgate University; A.M., Ph.D., Harvard University.

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Andrea Corbett, Assistant Professor, English; B.A., University of New Hampshire; M.A., Vanderbilt University.

Michael Costello, Instructor, Art; B.F.A., Columbus College of Arts and Crafts; M.F.A., Syracuse University.

Enrique Cuan, Assistant Professor, Spanish; A.B., Gonzaga University; A.M., Johns Hopkins University.

Arthur T. Dabilis, Assistant Professor, English; A.B., Suffolk University; M.A., Northeastern University.

Mitra Das, Assistant Professor, Sociology; A.B., A.M., University of Rajasthan; Ph.D., University of Massachusetts.

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Richard Derry, Associate Professor, History; A.B., Holy Cross College; A.M., Boston College.

Robert J. DeYoung, Assistant Professor, English; B.A., M.A., New York University.

John B. Duff, Professor, History; B.S., Fordham University; M.A., Seton Hall University; Ph.D., Columbia University.

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Oliver J. Ford, Associate Professor, English; B.A., M.A., Tulane University; B.F.T., American Graduate School of International Management; Ph.D., University of Connecticut.

Richard R. Forster, Assistant Professor, English; B.A., Louisiana State University; M.A., University of Southern California.

Robert J. Foy, Professor, English; B.S., Plymouth State College of U.N.H.; M.A., Ed.S., George Peabody College; Ed.M., Ed.D., Harvard University.

Arthur Friedman, Assistant Professor, English; A.B., City College of New York; A.M., Boston University.

Joseph Garreau, Professor, French; A.B., University of Poitiers; S.T.L., College Saint-Albert de Louvain; A.M., Ph.D., Boston College.

Patricia A. Goler, Professor, History; A.B., Regis College; A.M., Ph.D., Boston College; L.L.D. (Hon.) Regis College; D.H.L. (Hon.) Emmanuel College.

June Gonsalves, Assistant Professor, Criminal Justice; B.A., J.D., Northeastern University.

Robert Griffith, Assistant Professor, Art; B.S.Ed., Massachusetts College of Art; M.F.A., Pratt Institute.

Margaret F. Guindon, Assistant Professor, English; B.S., A.M., Boston University.

Herbert Haber, Associate Professor, English; A.B., Brooklyn College; A.M., University of Chicago; Ph.D., Brandeis University.

Edith C. Hancock, Assistant Professor, French; A.B., D.A. (Agregation), University of Paris.

William S. Harrison, Assistant Professor, Sociology; A.B., Harvard University.

Nancy Henley, Professor, Psychology; B.S., M.A., Ph.D., Johns Hopkins University.

Jon C. Hellstedt, Associate Professor, Psychology; A.B., Augustana College; B.D., Yale University; Ph.D., Boston University.

J. Heli Hernandez, Assistant Professor, Spanish; A.B., University Javeriana Bogota; A.M., Ph.D., Catholic University.

William R. Hersey, Assistant Professor, English; B.S., Lowell State College; M.A., Boston College.

Lester B. Hudson, Assistant Professor, English; A.B., M.A., Boston University.

Kathleen D. Hulbert, Assistant Professor, Psychology; A.B., Northwestern University; Ed.M., Boston University; C.A.G.S., University of New Hampshire.

Robert E. Innis, Professor, Philosophy; A.B., St. Mary's College; S.T.B., Gregorian University; A.M., Ph.D., Fordham University.

Charles E. Jarvis, Professor, English; B.S., M.A., Boston University.

Kalervo Kansanniva, Associate Professor, English; B.S.Ed., Ed.M., Fitchburg State College; A.M., Boston University.

Renee Kasinsky, Associate Professor, Criminal Justice; B.A., M.A., Ph.D., University of California at Berkeley.

Marianne H. Knowlton, Assistant Professor, English; B.A., Smith College; M.A., Tufts University.

Shirley Kolack, Professor, Sociology; B.S., A.M., Ph.D., Boston University.

Mary D. Kramer, Assistant Professor, English; A.B., University of Wisconsin; A.M., Ph.D., University of Kansas.

David A. Landman, Assistant Professor, English; A.B., New York University; A.M., Boston University.

David Landrigan, Assistant Professor, Psychology; B.S., Tufts University; M.A., Ph.D., University of New Hampshire.

Clifford L. Lewis, Associate Professor, American Studies & English; A.B., Union College; A.M., SUNY, Buffalo; Ph.D., University of Texas.

Frederick P. Lewis, Assistant Professor, Political Science; A.B., Columbia College; J.D., Harvard University; Ph.D., Tufts University.

Jonathan J. Liebowitz, Assistant Professor, History; A.B., Columbia University; M.A., Ph.D., University of California, Berkeley.

Alan Lincoln, Assistant Professor, Criminal Justice; B.S., Michigan State; M.S., M.A., Ph.D., University of Massachusetts.

Joseph W. Lipchitz, Professor, History; B.A., M.A., University of Massachusetts; Ph.D., Case Western Reserve University.

George W. Luter, Assistant Professor, History; B.S., A.M., Xavier University.

John MacDougall, Assistant Professor, Sociology; B.A., Oxford University; Ph.D., Harvard University.

Charlotte Mandell, Assistant Professor, Psychology; B.A., Brooklyn College; M.A., Ph.D., Columbia University.

Donald J. Mattheisen, Associate Professor, History; A.B., A.M., Ph.D., University of Minnesota.

John J. McCaffrey, Assistant Professor, English; A.B., Suffolk University; A.M., Tufts University.

Martha McGowan, Assistant Professor, English; A.B., Brandeis University; A.M., Boston College; Ph.D., Boston University.

John M. Mendicoa, Associate Professor, Spanish; A.B., S.T.L., University of Salamanca; A.M., Ph.D., Catholic University.

Barbara Miliaras, Assistant Professor, English; A.B., Ed.M., Boston University; Ph.D., Tufts University.

Avalon N. Minton, Assistant Professor, Political Science; A.B., Wake Forest University; A.M., Brown University.

Howard K. Moore, Professor, English; A.B., A.M., Boston University; M.L.S., Simmons College; Ph.D., Boston University.

William L. Mulcahy, Jr., Assistant Professor, Spanish; B.A., Harvard University; M.Ed., Salem State College.

Charles Nikitopoulos, Instructor, Psychology; A.B., Suffolk University; A.M., New School for Social Research.

Frederick A. Norton, Associate Professor, History; A.B., A.M., Boston College.

William G. Nowlin, Jr., Assistant Professor, Political Science; B.A., Tufts University; M.A., University of Chicago.

Marie O'Brien, Assistant Professor, Sociology; B.S., M.A., Ph.D., Tufts University.

Judith T. O'Brien, Assistant Professor, Psychology; B.A., University of Colorado; Ph.D., State University of New York.

Gerard W. O'Connor, Professor, English; A.B., Harvard University; A.M., Ph.D., Boston University.

Leo Panas, Associate Professor, Art; B.S.Ed., Massachusetts College of Art; Ed.M., Fitchburg State College.

Pho Ba Hai, Assistant Professor, Political Science; A.B., Boston College; A.M., Rutgers University; A.M., Ph.D., Boston University.

Brenda Pinardi, Associate Professor, Art; B.S.Ed., Massachusetts College of Art; M.F.A., Rhode Island College of Design.

Carlton Plummer, Associate Professor, Art; B.S.Ed., Massachusetts College of Art; M.F.A., Boston University.

Miriam D. Price, Assistant Professor, History; A.B., Smith College; M.A., Boston University.

John J. Riley, Associate Professor, English; A.B., M.A., Boston University; Ph.D., Tufts University.

William H. Roberts, Assistant Professor, English; A.B., B.S., A.M., Ph.D., Ohio State University.

Maurice Marc Rondeau, Associate Professor, Psychology; B.Ph., Angelicum University; A.M., Assumption College; Ph.D., Boston University.

Joan A. Rothschild, Associate Professor, Political Science; A.B., Cornell University; M.A., Ph.D., New York University.

Charles J. Ryan, Assistant Professor, English; B.A., University of Connecticut; M.A., University of Massachusetts.

Herlinda Ch. Saitz, Assistant Professor, Spanish; Licenciatura, University of Panama; Diplomas de Especializacion, Seminario Andres Bello, Colombia.

Deborah Schildkraut, Assistant Professor, Psychology; B.A., Chatham College; M.S., Ph.D., University of Miami.

Roger T. Schiness, Assistant Professor, History; B.S., John Carroll University; M.A., Ph.D., State University of New York (Binghamton).

Allie Scruggs, Professor, Psychology; B.S., Ed.M., Ed.D., Boston University.
 Gloria C. Seeman, Assistant Professor, Psychology; A.B., City College of New York; M.S., Ph.D., Syracuse University.
 John J. Shea, Associate Professor, History; A.B., Harvard College; A.M., Creighton University; Ph.D., Boston University.
 Richard A. Siegel, Associate Professor, Psychology; A.B., Harvard College; M.S., Yale University; Ph.D., Boston University.
 Linda Silka, Assistant Professor, Psychology; B.S., Oklahoma State University; M.A., Ph.D., Kansas University.
 P. Christopher Smith, Professor, Philosophy; A.B., A.M., Columbia University; Ph.D., University of Heidelberg.
 Frederick Sperounis, Assistant Professor, Sociology; B.S.Ed., Salem State College; M.A., Ph.D., Brandeis University.
 Robert A. Stein, Professor, English; A.B., Clark University; A.M., Ph.D., Brandeis University.
 Phyllis Sweet, Associate Professor, Psychology; A.B., M.A., Boston University; M.Ed., Northeastern University; Ph.D., Boston College.
 Gardner Tillson, Assistant Professor, English; A.B., Tufts University; A.M., Pennsylvania State University.
 Anthony C. Turrisi, Assistant Professor, English; B.S., Massachusetts Institute of Technology; M.A., University of Wisconsin.
 Francis R. Walsh, Professor, History; B.S., M.A., Ph.D., Boston University.
 Mary Roth Walsh, Associate Professor, American Studies & Psychology; B.S., Mount Mary College; M.S., Cornell University; Ph.D., Boston University.
 Joseph W. Waterman, Associate Professor, Psychology; B.S., University of Vermont; M.B.A., Boston University; Professional Diploma, (Guidance), University of Connecticut.
 Robert J. Whelan, Assistant Professor, German; B.A., Boston College; M.A., Catholic University of America.
 Roger E. Wiehe, Professor, English; B.A., Yale University; M.A., University of Illinois; Ph.D., Columbia University.
 Lynnette Woods, Instructor, French; B.A., M.A., Ph.D., Michigan State University.
 Joseph Zaitchik, Professor, English; A.B., Suffolk University; A.M., Ph.D., Boston University.

VISITING LECTURERS

Barker, Bruce B., History & Political Science (Criminal Justice); B.S., Eastern Michigan University; M.A., Michigan State University.
 Blomquist, Karen, History & Political Science (Criminal Justice); B.A., Bates College; M.S., Southern Illinois University.
 Dacus, Jane, Psychology; B.S., University of Tennessee; M.S., Memphis State University; Ph.D., Tulane University.
 Donahue, Susan, Languages (Russian); B.A., Emmanuel College.
 Droney, James, English (Journalism); B.A., Boston College.
 Duarte, Carlota, Art (Photography); B.A., Maryville College; B.F.A., Manhattanville College; M.F.A., Rhode Island School of Design.
 Fowler, Anne, English (Composition); A.B., Radcliffe College; M.A., Boston University.
 Gebre-Medhin, Jordan, Sociology; B.A., M.A., Purdue University.
 Gottfried, Rosalind, Sociology; B.A., Rutgers University; M.A., Brandeis University.
 Green, Brenda, English (Composition); B.A., Lowell State College; M.S., Eastern Illinois University.
 Hojnacki, Mary, English (Composition); B.A., Worcester State College; M.A., University of New Hampshire.
 Hurley, Arnold J., Art (Painting & Drawing); B.S.Ed., M.F.A., Tufts University.
 Koslow, Francine, Art (Art History); B.A., Brandeis University; M.A., University of California at Berkeley.
 Krushnic, Richard, Sociology; B.A., University of Colorado; M.A., Goddard College (Cambridge).
 Howard, Michael, Philosophy; B.A., University of Chicago; M.A., Boston University.
 Lange, Ann, Philosophy; B.A., Chatham College; M.A., Boston College.

Magrass, Yale, Sociology; B.A., Brandeis University; M.A., Ph.D., University of California at Santa Barbara.

Martin, James, English (Composition); A.B., Colby College; Th.M., Ph.D., Boston University

McDaniel, Joyce, Art (Art History); B.A., Boston College; B.B.A., University of Oklahoma; M.A., Wellesley College.

McGrath, Daniel, Psychology; A.B., Cornell University; M.S., Ph.D., Columbia University.

Minton, Helena, English (Composition); B.A., Beloit College; M.F.A., University of Massachusetts at Amherst.

Moore, Thomas, Sociology; B.A., Dartmouth College; M.A., Indiana University.

Mosley, Victoria, Psychology; A.B., Lincoln University; M.A., Boston University.

Moss, Mark, Psychology; B.S., University of Massachusetts at Amherst; M.A., Ph.D., Northeastern University.

Murphy, Anne, English (Composition); B.S., M.A., Boston University.

Narrett, Eugene, English (Composition); B.A., M.A., M.Phil., Columbia University.

Omar, Aftab, Sociology; B.S., Massachusetts Institute of Technology.

O'Neil, Edward, Art (Commercial Art); Diploma, Vesper George School of Arts.

Pidgeon, Robert, History & Political Science (Criminal Justice); B.S., Pennsylvania State University; M.S., Florida State University; M.P.A., Golden Gate University.

Polites, Gloria, History & Political Science (Public Administration); B.S., Lowell State College.

Roy, Robert E., History & Political Science (Criminal Justice); A.S., Mt. Wachusett Community College; B.S., University of Maine at Portland.

Ryan, Rosalie, English (Composition); B.A., Salem State College; M.A., Boston College.

San Juan, Joel, Sociology; B.S., Boston State College.

Simons, Lewis, Philosophy; B.S., Suffolk University, M.S., Ph.D., Boston College.

Snee, Carole, Sociology; B.A., Occidental College; M.S., Columbia University.

Sofman, Esta, English (Composition); B.A., Syracuse University; M.A.T., Fairleigh Dickinson University.

Tassel, Janet, English (Composition); B.A., M.A., Simmons College.

Thomas, David, Art (Printmaking); B.F.A., Tufts University; M.F.A., Rhode Island School of Design.

Turgeon, Gregoire, English (Composition); B.A., Merrimack College; M.A., Hofstra University.

Vosniadou-Papanicolas, Stella, Psychology; B.A., Brandeis University; M.A., Columbia University.

Wasserman, Cary, Art (Photography); B.A., M.A., University of California at Berkeley.



COLLEGE OF PURE AND APPLIED SCIENCES

John I. Bruce, Dean (Leave of Absence, 1978-80)

Joseph C. Salamone, Acting Dean

Motivation for the pursuit of scientific and mathematical inquiry stems from two basic human characteristics. One is the quest for knowledge for its own sake in order to understand the workings of our universe, and the other is the desire to enlist the investigative techniques of science and mathematics in the service of humanity in order to improve the quality of life. These two aspects of science, one of which allows us to properly define the energies and matter of our reality and the other of which is applied to the task of freeing our lives from disease and deprivation, are integrated and harmonious activities—although from time to time the relative emphasis placed by society on each activity may change. Until the Industrial Revolution, the cultural side of science was in the ascendance. Since this time, a greater society awareness has been placed on the practical application of the scientific discovery process; and during the past century science has so enriched our lives that it is difficult to conceive of a truly educated person who has not had exposure to some of the concepts and methodologies of science.

Undergraduate programs in the pure and applied sciences serve the preprofessional needs of students who desire to enter such professions as medicine and provide excellent preparation for graduate studies in the several pure and applied sciences as well as for science-oriented careers in business, government, and industry. Regardless of the student's career goals, however, the program of study which an individual may elect should have universal perspective and significance as well as particular depth and comprehension. It should provide experiences for developing competency in using the modes of thought characteristic of the major areas of scientific knowledge as well as providing the opportunity for developing a thorough understanding of at least one scientific area. To the degree that undergraduate education in the pure and applied sciences is the basis for further graduate training, for career preparation, or for the meaningful perception, integration and understanding of life experiences, it must be both general and specific and must be determined not only by such personal considerations as individual interests, demands, and competencies but also by such impersonal factors as the spectrum of scientific knowledge and the nature of particular scientific disciplines.

OBJECTIVES OF THE COLLEGE OF PURE AND APPLIED SCIENCES

The educational objectives of the College of Pure and Applied Sciences are to contribute to the advancement of science, to provide support and service courses for non-science majors, to provide the basic understanding of scientific concepts and methodologies which is an essential ingredient of a liberal education, and to prepare students for entry into the various science-related professions.

The curricula of the College seek to increase the capacities of students who major in the pure and applied sciences for understanding themselves and the world in which they live, especially as these capacities relate to the modes of thought which are characteristic of the major areas of scientific knowledge. To accomplish this objective, the several curricula are organized to foster fundamental communication skills in language and mathematics, to promote appreciation and comprehension of man's cultural, social, physical, and biological environment through exposure to the major areas of human knowledge, to develop a thorough understanding of the scientific method upon which all scientific endeavor is based, and to provide the special and technical knowledge which accrues from a penetrating study of a particular discipline in the pure and applied sciences.

COLLEGE ORGANIZATION & GOVERNANCE

The College of Pure and Applied Science is organized into five departments and is administered by a dean, who is assisted by an all-college council. The five departments are responsible for developing course offerings and programs of studies. Although the faculty of the College has overall responsibility for all academic policies of the College, the Undergraduate Academic Standards and Curriculum Committee is responsible for enforcing the academic standards of the pure and applied sciences faculty and also serves as a review body for suspended students seeking readmission with probationary status.

Undergraduate Academic Standards and Curriculum Committee

Dr. Shimshon Berkovits, Mathematics
Dr. Nelson Eby, Earth Sciences
Dr. Robert Litman, Chemistry
Dr. Arthur Mittler, Physics
Mr. Paul Protopapas, Biological Sciences

College Council

Dr. Robert Coleman, Biological Sciences
Mr. Alan Doerr, Mathematics
Dr. Albert Kowalak, Chemistry
Dr. Gunter Kegel, Physics
Dr. Arnold O'Brien, Earth Sciences
Dr. Joseph Salamone, Dean

BACCALAUREATE DEGREE PROGRAMS

The College of Pure & Applied Science offers undergraduate programs leading to the Bachelor of Arts degree and to the Bachelor of Science degree. Students who matriculate for the degree of Bachelor of Arts may pursue majors in chemistry or environmental sciences. Students who matriculate for the degree of Bachelor of Science may pursue majors in biological sciences, chemistry, environmental sciences (geology option), mathematics, meteorology, physics,

and radiological health physics. Students should consult the *Graduate School Catalogue* for information concerning masters programs in biological sciences, chemistry, mathematics, physics and applied physics, polymer science, radiological sciences and protection, and doctoral programs in chemistry, physics, and applied physics.

In addition to satisfying general University requirements for baccalaureate degrees as are defined elsewhere in this publication under the heading "Academic Policies: Baccalaureate Studies," students who matriculate for degrees in the College of Pure & Applied Sciences also must complete a specific minimum number of courses and credits in the College of Pure & Applied Sciences. These College requirements are described below. Except as specified by college and program restrictions, students are permitted to elect any course for which they can satisfy prerequisite requirements in fulfilling an unrestricted elective requirement. However, in order to designate courses from other colleges of the University as science or mathematics courses, students must petition the Undergraduate Curriculum Committee of the College of Pure & Applied Sciences.

Some degree candidates in the College of Pure & Applied Sciences may be interested in pursuing a second major which is offered by the College or another college of the University. Students who wish to elect a second major should consult the relevant policies which appear elsewhere in this publication under the heading "Academic Policies: Major Field Requirements." Students who elect academic majors in more than one college are candidates for one degree only, and they are considered to be degree candidates in the college of their initial major unless they indicate to the contrary at the time they make a declaration of second major by filing for intercollegiate transfer. Accordingly, a student who pursues academic majors in two colleges is subject to all degree requirements as specified by the college of his or her initial major and is subject only to major course requirements (including any collateral and prerequisite courses for the major) as specified by the department of his or her second major.

Students who are interested in satisfying degree requirements in the College of Pure & Applied Sciences and who also wish to complete professional degree programs in other colleges should inquire if dual degree programs can be authorized. (Cf. "Academic Policies: Dual Degree Programs.")

Minor areas of study which are offered by the College of Pure & Applied Sciences are as follows: biological sciences, chemistry, geology, mathematics, and physics. College majors may wish to consider these minors, other minors which are offered by the College of Liberal Arts, the College of Management Science, the College of Music, and specialized course sequences of the College of Engineering. All minor programs of the University require 18-24 credits, six of which must be at the 300 course level or above.

Bachelor of Arts Degree

Curricula leading to the Bachelor of Arts degree are designed to provide a broad, comprehensive education and generally provide more liberal options than are

permitted within Bachelor of Science programs. All Bachelor of Arts programs which are offered by the College of Pure & Applied Sciences require, as a minimum, 60 credits and 15 courses in science and mathematics offerings of the College. At least three courses are required in mathematics and four courses are required in sciences which are exclusive of the student's major program. Bachelor of Arts programs of the College also require, as a minimum, 50 credits and 15 courses from the offerings of the College of Liberal Arts, the College of Music, and the economics offerings of the College of Management Science. For University policies concerning majors presented for the Bachelor of Arts degree, see policies which appear elsewhere in this publication under the heading "Academic Policies: Major Field Requirements."

Bachelor of Science Degree

The Bachelor of Science degree is designed to provide students with a specialized education in one or more of the basic sciences. Specialized Bachelor of Science curricula which are offered in areas of the pure and applied sciences and mathematics provide opportunities for major and minor program options but afford greater opportunities for major specialization than are permitted in comparable Bachelor of Arts curricula.

All Bachelor of Science programs require, as a minimum, 74 credits and 20 courses from the offerings of the College of Pure and Applied Sciences. At least three courses are required in mathematics beyond college algebra and must include two calculus courses and one additional mathematics elective. Four courses with laboratory are required in physics and/or chemistry and two courses are recommended in collateral sciences outside the major field.

For University policies concerning majors presented for the Bachelor of Science degree, see policies which appear elsewhere in this publication under the heading "Academic Policies: Major Field Requirements."

GENERAL COLLEGE REQUIREMENTS

In order to qualify for a baccalaureate degree offered by the College of Pure and Applied Sciences, undergraduates must comply with the University Core Requirements, must conform to the rules of the College of Pure and Applied Sciences which govern degree and major studies for such degrees, and must earn 2.00 averages in their major fields by the end of their senior year.

Language Proficiency Requirement

Although the College of Pure and Applied Sciences does not require language proficiency, each department has the prerogative of specifying a level of language proficiency as a collateral requirement for major studies. Students matriculating for the Bachelor of Science degree who major in chemistry or physics (pure physics option only) must pass one year of a foreign language. Students majoring in science areas or mathematics who anticipate further studies at the graduate level are strongly advised to develop an intermediate reading proficiency in French or German.

Declaration of Major and Change of Major

Students who are admitted to the College of Pure & Applied Sciences are advised to declare their major fields during their freshman year and are required to make such declaration at the end of the sophomore year. Students should consult policies listed elsewhere in this publication under the heading "Academic Policies: Major Field Requirements" for a complete discussion of declaration of major, declaration of second major, change of major within the college of enrollment, and changes of major with intercollegiate transfer.

Transfer Policies

Students transferring to the College of Pure & Applied Sciences from other colleges of the University or from other institutions may expect recognition of previously completed courses if these are equivalent to those which are specified by curricula of the College. Prerequisites for courses of the Major Field Requirements, or courses which are prerequisites for admission to the College, may not be credited to the minimum requirements for a baccalaureate degree in mathematics or the sciences. Irrespective of any previous recognition by the Office of Admissions or by other colleges of the University, a student who transfers from another college of the University to the College of Pure & Applied Sciences may not have either group of the above prerequisite courses credited to minimum degree requirements of the College.

Transfer from Other Institutions

Courses which are transferred from other institutions are initially evaluated by the Office of Admissions in terms of general University requirements when a student is admitted to the University and also are evaluated by major departments in terms of college and program requirements at the time a student is accepted for matriculation by the College of Pure & Applied Sciences. Courses which are transferred to the University under provisions of the Massachusetts Transfer Compact and which are not creditable to requirements of the College of Pure & Applied Sciences or as unrestricted elective courses will be listed on the student's permanent record card but will not apply to the minimum degree requirements. In the event that a student who has transferred to the University under the Massachusetts Transfer Compact subsequently makes an intercollegiate transfer to the College of Pure & Applied Sciences, all previously completed courses, including transferred courses from other institutions, will be reevaluated in terms of their applicability to degree requirements of the College of Pure & Applied Sciences.

The applicability of grades received in transferred courses for the determination of the grade-point average of the student's major at the University of Lowell is determined by policies of each of the colleges. The policy of the College of Pure & Applied Sciences is *not* to count such grades for the purpose of determining the student's major grade-point average.

Repetition of Transferred Courses

A student who has been granted transfer credit, and on this basis has been assigned to advanced courses for which the transferred course is a prerequisite, may be advised to repeat such transferred work at the University or to take a more elementary course than that which has been transferred when the competence of the student has been demonstrably inadequate. Permission to repeat a transferred course is granted by filing an academic petition form through the office of the College Dean. Since credit may not be granted more than once for the completion of any course, a condition for filing such a petition is the simultaneous filing of a request to revoke recognition of the previously transferred course.

Intercollegiate Transfer to the College of Pure & Applied Sciences

Students wishing to transfer from another college of the University, or from baccalaureate continuing-education programs of the Evening School, must file a petition, together with a transcript of their permanent record cards, with the appropriate chairperson and the Dean of the College of Pure & Applied Sciences by November 1 for spring semester transfer and by April 1 for fall semester transfer. Students are referred to University policies concerning intercollegiate transfer which appear elsewhere in this publication under the heading "Academic Policies: Change of Major with Intercollegiate Transfer" for further procedural details. Records of students who are approved for transfer are reviewed by the Office of the Dean and, irrespective of grades previously received in other college programs, all courses which may not be applied to college or program requirements are deleted from the student's cumulative grade-point average.

COLLEGE AWARDS

American Chemical Society Student Affiliate Chapter Award: An award is presented annually by the ACS Student Affiliate Chapter to the outstanding senior majoring in chemistry or chemical engineering based upon academic performance and demonstration of research capability.

Chemistry Award: An award is given to the freshman student in chemistry who shows the greatest achievement in chemistry.

Dean's Key: This award is sponsored by the College of Pure and Applied Sciences and is given to a graduating senior who has displayed academic excellence in course work and in other scholastic activities.

Departmental Awards: An award by the Chemical Rubber Company is presented annually to the outstanding freshman in chemistry, mathematics, and physics programs.

Dr. Charles R. Mingins Award: This award is given in honor of the first chairman of the Department of Physics and is granted to the senior student majoring in physics or applied physics who has evidenced the highest scholastic achievement and research aptitude.

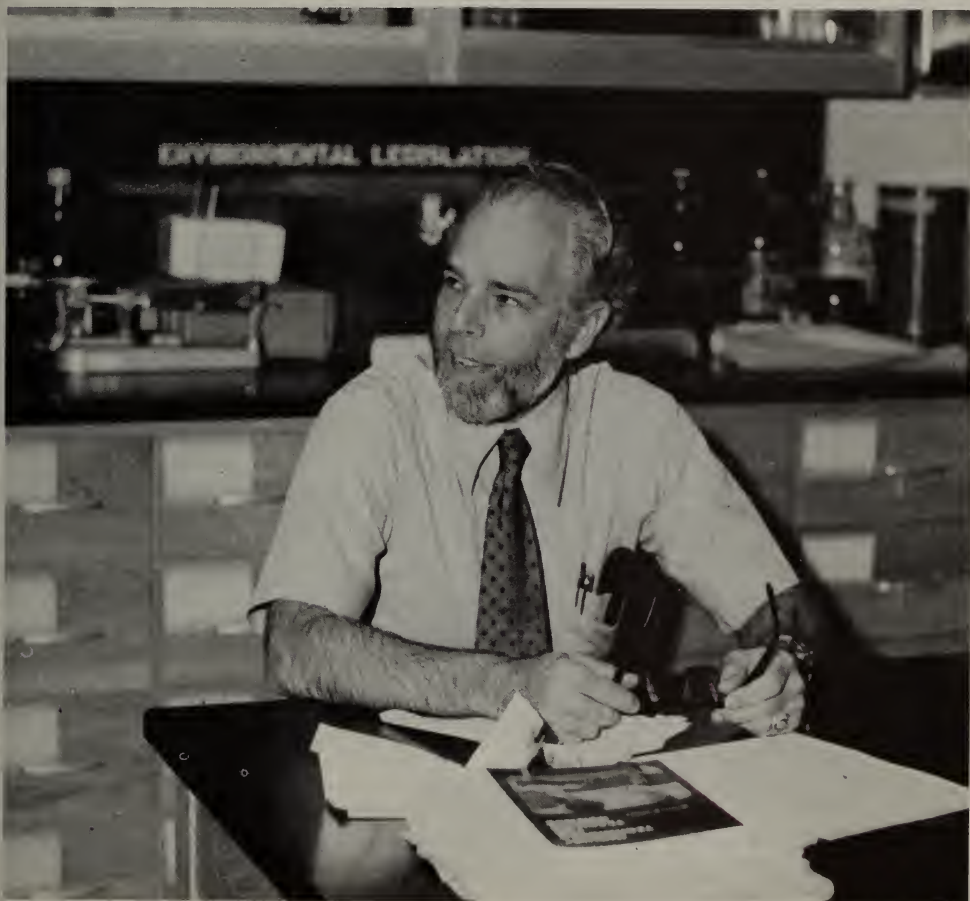
Louis A. Olney Book Prizes: Stipends of \$80, \$100, and \$150 are awarded each spring respectively to a sophomore, junior and senior chemistry major. Awards are based solely on scholastic achievement.

COLLEGE SCHOLARSHIP & LOAN PROGRAMS

Roland E. Derby, Sr. Memorial Scholarship: This scholarship is awarded in alternate years to a sophomore who is a chemistry or chemical engineering major and is granted on the basis of scholarship and financial need. The stipend is \$500 per year and is renewable for recipients in good academic standing.

Russell Weeks Hook Scholarship: This scholarship is awarded each year to two chemistry majors in the sophomore, junior and senior classes and is granted on the basis of scholarship and financial need. The stipend is \$400 per year and is renewable for recipients in good academic standing.

Geigy Dyestuff Student Loan Fund: Students in chemistry and paper engineering may borrow from this fund at an interest rate of 1% per quarter. The loan becomes due following graduation.



DEPARTMENT OF BIOLOGICAL SCIENCES

Robert Coleman, Chairperson

Professors: John Bruce, Robert Coleman, Ethel Kamien, Nicholas Rencricca

Associate Professors: Robert Lynch, Timothy MacDonald, John Mallet, Thaddeus Osmolski, Paul Protopapas, Ilze Skare

Assistant Professors: David Eberiel, Curtis Hinckley, Jerome Hojnacki, Siu Lam Lee, John Lyon, Ezequiel Rivera, Prentiss Shepherd

The Department of Biological Sciences offers a major in the biological sciences which leads to the degree of Bachelor of Science. The Department also offers a minor area of study.

Biological Sciences Major

Curricula in the biological sciences are designed to provide appropriate sequences of science and liberal arts courses which will develop those scientific attitudes and habits of mind which are fundamental to successful careers in biology and cognate fields. Two program options (Track I and Track II) are offered under the requirements for the Bachelor of Science degree and provide students with opportunities to tailor their undergraduate education in accordance with their personal interests and career goals and the specific requirements of graduate and professional schools. Track selection is made by the student, in consultation with a faculty advisor, at the end of a common freshman year. Students demonstrating high scholastic ability in either track may conduct investigative studies throughout the senior year and complete an original research project. A pre-medical advisor is available for students specifically interested in dentistry and medicine.

Summary of Degree Requirements

I University Core Requirements	23
Physical Education	2
English Composition	6
Area I (Behavioral & Social Sciences)	6-9*
Area II (Fine Arts & Humanities)	6-9*
Area III (Mathematics & Sciences)	(12)+

*A minimum of two courses and six credits must be presented in each of the three areas of the University Core Requirements. An additional three courses and nine credits must be presented from among the three areas of the University Core Requirements. Students may not present more than three courses and nine credits from the offerings of any one department (except that not more than two courses and six credits may be presented from the offerings of the English Department) and may not present more than four courses and twelve credits in any one distribution area.

+Area III requirement is satisfied by specified physics and mathematics courses of the Major Field Requirements for Supporting Sciences & Mathematics.

II Major Field Requirements#	74-79
A Biological Sciences	39-41
81-111: Principles of Biology I	3
81-113: Principles of Biology I Laboratory	1
81-112: Principles of Biology II	3
81-114: Principles of Biology II Laboratory	1
81-201: General Microbiology	3

81-203:	General Microbiology Laboratory	1
81-252:	Mammalian Physiology and	3
81-254:	Mammalian Physiology Laboratory or	1
81-324:	General and Comparative Physiology and	(3)
81-326:	General and Comparative Physiology Laboratory	(1)
81-335:	Principles of Genetics and	3
81-337:	Principles of Genetics Laboratory or	1
81-371:	Introduction to Molecular Genetics and	(3)
81-373:	Introduction to Molecular Genetics Laboratory	(1)
81-306:	Biochemistry	3
81-451:	Senior Seminar in Advanced Topics I	1
81-452:	Senior Seminar in Advanced Topics II	1
Four electives with an "81" prefix		14-16
B	Supporting Sciences and Mathematics	35
84-121:	Chemistry	3
84-123:	Chemistry Laboratory	1
84-122:	Chemistry	3
84-124:	Chemistry Laboratory	1
84-221:	Organic Chemistry IA	3
84-227:	Organic Chemistry Laboratory I or	1
84-229:	Organic Chemistry Laboratory IA	(1)
84-222:	Organic Chemistry IIA	3
84-228:	Organic Chemistry Laboratory II or	1
84-230:	Organic Chemistry Laboratory IIA	(1)
92-131:	Calculus I-B or	4
92-133:	Calculus I-A	(4)
92-132:	Calculus II-B or	4
92-134:	Calculus II-A	(4)
92-385:	Biostatistics	3
95-201:	Principles of Physics I and	3
95-202:	Principles of Physics II and	3
96-201:	Principles of Experimental Physics I and	1
96-202:	Principles of Experimental Physics II	1

III Program Options# 20-25

A Track I

This program provides an opportunity to elect a more flexible program than is possible in Track II. All courses above and beyond the University Core Requirements and the Major Field Requirements are selected by students in accordance with their needs, talents, and interests and in consultation with their faculty advisors. Minor areas of study* may be selected in the fine arts, sciences, humanities, behavioral sciences, and social sciences.

*A minimum of 6 credits at the 300 - 400 level is required for all minors.

B Track II

This option is a directed program which affords the student an opportunity to develop an in-depth proficiency in the experimental and quantitative approaches to problem solving in the field of biology. Appreciation for the importance of a breadth of understanding of related scientific disciplines is stressed. This option should provide the student with a competitive advantage in areas of science which deal with modern quantitative concepts.

IV Minimum Credit Requirements 122

#Prerequisites for courses of the Major Field Requirements, or courses which are prerequisites for admission to the College of Pure and Applied Sciences, may not be credited to requirements for degrees in the College of Pure and Applied Sciences. All Bachelor of Science programs require, as a minimum, 74 credits and 20 courses from the offerings of the College of Pure and Applied Sciences.

Biological Sciences Minor

A minor in biological sciences consists of the following:

1. A year sequence of a course in introductory biology with a laboratory component. This requirement may be satisfied by electing the lecture and laboratory sections in either the Principles of Biology or Life Science.
2. Four additional 3 or 4 credit courses offered by the Department of Biological Sciences with an "81" prefix. Two of these courses must have a laboratory component.

SAMPLE COURSE OF STUDY FOR BIOLOGICAL SCIENCES

(Bachelor of Science Degree — Track I)

Freshman Year

Fall Semester		Spring Semester	
* 81-111 Principles of Biology I	3	* 81-112 Principles of Biology II	3
* 81-113 Principles of Biology I Laboratory	1	* 81-114 Principles of Biology II Laboratory	1
84-121 Chemistry	3	84-122 Chemistry	3
84-123 Chemistry Laboratory	1	84-124 Chemistry Laboratory	1
+ 92-131 Calculus B-I	4	+ 92-132 Calculus B-II	4
42-101 College Writing	3	42-102 College Writing & Literature	3
39 Physical Education	1	39 Physical Education	1
	<hr/> 16		<hr/> 16

Sophomore Year

Fall Semester		Spring Semester	
81-201 General Microbiology	3	+ 81-252 Mammalian Physiology	3
81-203 General Microbiology Laboratory	1	+ 81-254 Mammalian Physiology Laboratory	3
84-221 Organic Chemistry I-A	3	84-222 Organic Chemistry II-A	3
+ 84-229 Organic Chemistry Laboratory	1	+ 84-230 Organic Chemistry II-A Laboratory	1
95-201 Principles of Physics I	3	95-202 Principles of Physics II	3
96-201 Principles of Experimental Physics I	1	96-202 Principles of Experimental Physics II	1
Elective	3-4	92-385 Biostatistics	3
	<hr/> 15-16		<hr/> 15

Junior Year

Fall Semester		Spring Semester	
81-306 Biochemistry	3		
+ 81-335 Principles of Genetics	3		
+ 81-337 Principles of Genetics Laboratory	1		
Electives	6-9	Electives	15-18
	<hr/> 13-16		<hr/> 15-18

Senior Year

Fall Semester		Spring Semester	
81-451 Senior Seminar in Advanced Topics	1	81-452 Senior Seminar in Advanced Topics	1
Electives	15	Electives	14
	<hr/> 16		<hr/> 15

*81-111, 113 are not prerequisite to 81-112, 114 and may be taken fall or spring semesters.

+Cf. Summary of Degree Requirements for listings of approved alternative courses.

SAMPLE COURSE OF STUDY FOR BIOLOGICAL SCIENCES

(Bachelor of Science Degree—Track II)

Freshman Year

Fall Semester		Spring Semester	
* 81-111 Principles of Biology I	3	* 81-112 Principles of Biology II	3
* 81-113 Principles of Biology I Laboratory	1	* 81-114 Principles of Biology II Laboratory	1
84-121 Chemistry	3	84-122 Chemistry	3
84-123 Chemistry Laboratory	1	84-124 Chemistry Laboratory	1
+ 92-131 Calculus B-I	4	+ 92-132 Calculus B-II	4
42-101 College Writing	3	42-102 College Writing & Literature	3
39 Physical Education	1	39 Physical Education	1
	<hr/> 16		<hr/> 16

Sophomore Year

Fall Semester		Spring Semester	
81-201 General Microbiology	3	+ 81-252 Mammalian Physiology	3
81-203 General Microbiology Laboratory	1	+ 81-254 Mammalian Physiology Laboratory	3
84-221 Organic Chemistry I-A	3	84-222 Organic Chemistry II-A	3
84-229 Organic Chemistry Laboratory	1	84-230 Organic Chemistry II-A Laboratory	1
95-201 Principles of Physics I	3	95-202 Principles of Physics II	3
96-201 Principles of Experimental Physics I	1	96-202 Principles of Experimental Physics II	1
+ 92-231 Calculus B-III	3	92-385 Biostatistics	3
	<hr/> 15		<hr/> 15

Junior Year

Fall Semester		Spring Semester	
+ 81-335 Principles of Genetics	3	81-308 Biochemistry Laboratory	2
+ 81-337 Principles of Genetics Laboratory	1	84-336 Principles of Physical Chemistry II	3
84-335 Principles of Physical Chemistry I	3	84-338 Principles of Physical Chemistry Laboratory	1
84-337 Principles of Physical Chemistry Laboratory	1	Designated Physics Course	3
81-306 Biochemistry	3	Electives	6
Elective	3-4		
	<hr/> 14-15		<hr/> 15

Senior Year

Fall Semester		Spring Semester	
81-451 Senior Seminar in Advanced Topics	1	81-452 Senior Seminar in Advanced Topics	1
98-441 Radioisotope Techniques	3	Electives	13-16
98-443 Radioisotope Techniques Laboratory	1		
Electives	11-13		
	<hr/> 16-18		<hr/> 14-17

*81-111, 113 are not prerequisite to 81-112, 114 and may be taken fall or spring semesters.

+Cf. Summary of Degree Requirements for listings of approved alternative courses.



DEPARTMENT OF CHEMISTRY

Albert Kowalak, Chairperson

Professors: William Bannister, Alexandre Blumstein, Stuart Clough, Joseph Killelea, Phillip Lamprey, Vasilis Lavrakas, Robert Peirent, James Pierce, Chong Pyun, Harry Rubinstein, Joseph Salamone, Allen Scattergood, Ruth Tanner, Arthur Watterson

Associate Professors: Eugene Barry, Rita Blumstein, Martin Isaks, Stanley Israel, Albert Kowalak
Assistant Professors: Donald Hilton, Irving Lipschitz, Robert Litman, Samuel Sawan, Barbara Smith, Judith Tilden, Shan Wong

The Department of Chemistry offers majors in chemistry which lead to Bachelor of Arts and Bachelor of Science degrees. The Department also offers a minor area of study.

The Department of Chemistry strives to make its programs current by a continuous re-evaluation by its faculty members and its consumers. An outside advisory board of industrial and academic chemists has been established to advise the Department on all aspects of its academic program. Members of the Advisory Board meet with members of the Department twice a year. Current members of the Advisory Board are as follows:

Ernest I. Becker
Department of Chemistry
University of Massachusetts at Boston

Charles Chiklis
Polaroid Corporation
Cambridge, Massachusetts

Rosemary Ellersick
Abcor, Incorporated
Wilmington, Massachusetts

Paul F. Fennelly
GCA Corporation
Bedford, Massachusetts

William E. Gibbs
Foster Grant Co., Incorporated
Leominster, Massachusetts

M. Frederick Hoover
Ventron Corporation
Beverly, Massachusetts

Philip W. LeQuesne
Department of Chemistry
Northeastern University

Roger S. Porter
Department of Polymer Science & Engineering
University of Massachusetts at Amherst

Peter N. Rigopulos
Amicon Corporation
Lexington, Massachusetts

Carlos M. Samour
Kendall Company
Lexington, Massachusetts

Nathaniel S. Schneider
Army Materials & Mechanics Research Center
Watertown, Massachusetts

Chemistry Major

Chemistry is both a basic and an applied science and, as such, is fundamental not only to an understanding of the structure, properties, and reactions of matter, but also to comprehension of the very nature of twentieth-century civilization. Career opportunities in chemistry are as many and as varied as are the applications of chemistry to contemporary life and include, by way of example, applied and basic research, product analysis, manufacturing, and marketing. Completion of the chemistry curricula also provides preparation for all areas of the chemical profession as well as for graduate study in chemistry, dentistry, medicine, and teaching.

Both the Bachelor of Arts and the Bachelor of Science degree programs have been approved by the Committee on Professional Training of the American Chemical Society, and program options and course offerings are designed to meet the latest recommended standards. However, program options permit students to graduate as chemistry majors without meeting all of the requirements of the American Chemical Society. In such cases, a degree is not certified by the Society. Major programs for the Bachelor of Arts and Bachelor of Science degrees include required courses which supply a thorough grounding in basic chemistry principles and techniques and provide flexible requirement options in areas of analytical chemistry, biochemistry, environmental chemistry, inorganic chemistry, organic chemistry, physical chemistry, radiochemistry, and polymer chemistry. Chemistry programs also permit the incorporation of specialized laboratory or research courses which provide up-to-date knowledge concerning the utilization of such sophisticated instrumentation as atomic absorption spectroscopy, electron microscopy, gas liquid chromatography, nuclear magnetic resonance spectroscopy, and x-ray spectroscopy. In addition to supporting courses in physics and mathematics, the two chemistry curricula also include courses in the humanities and social sciences and permit limited elective programs in such fields as chemical engineering, materials science, chemical energy, business administration, technical writing and illustrating, and environmental science.

The Bachelor of Arts curriculum offers the student who is interested in such fields as chemical journalism or literature, illustrative arts (e.g., chemical graphics and illustrations), languages (technical translating), social sciences and the humanities with the opportunity to elect a major in chemistry while also pursuing options in areas of the humanities and social sciences. The Bachelor of Arts curriculum is also an appropriate program for students who are interested in preparing for teaching at the secondary school level and wish to pursue a graduate program in education. Although the curriculum of the Bachelor of Science degree is generally elected by students who are interested in professional careers in chemistry fields, the curriculum of the Bachelor of Arts degree is an equally appropriate choice for such students, especially when it is completed in accordance with requirements of the American Chemical Society.

The Bachelor of Science curriculum is directed to students who are interested in becoming professional chemists. Although the curriculum specifies a basic core of courses which are directed to basic principles and techniques, it is a flexible program of requirements which allows each student to select advanced courses according to his or her interests and goals and to pursue studies which combine proficiency in chemistry with training in such fields as business administration, biological sciences, mathematics, chemical engineering, electrochemistry, radiochemistry, materials science, chemical energy, and polymer chemistry. Courses in physics, mathematics, languages, social science, and literature serve to support the chemistry courses and to prepare the student to interact effectively in both social and professional settings.

For American Chemical Society Certification, 500 laboratory hours in chemistry and the equivalent of 400 hours of traditional classroom work in chemistry are required.* In addition to the chemistry core noted below, the ACS requires Advanced Inorganic Chemistry (84-334) or Biochemistry (84-419) or Polymer Chemistry (84-403 or 503) plus two semesters of advanced work presented at a level that utilizes fully the concepts and techniques developed in the core curriculum. Many patterns of advanced work are possible and appropriate, depending on individual interests and objectives. Advanced work in chemistry may include further courses in traditional areas of chemistry as well as polymer chemistry, biochemistry, and independent study and research. Alternatively, advanced work, approved by the Undergraduate Program Committee of the Chemistry Department, may be pursued outside of the department in, for example, physics, biology, or engineering.

*The required chemistry core of 36 credits provides 378 hours of lecture and 434 hours of laboratory.

Cooperative Education Program

The Department of Chemistry has formally adopted the voluntary University Cooperative Education Work Experience Program. This Program is designed to combine chemistry-oriented work experience in industrial or related laboratories with opportunities to earn an income. The Department schedules the student to start the off-campus program after the completion of four semesters of academic work, which must include the successful completion of one year of organic chemistry and one year of physical chemistry. Co-Op I begins in the summer session of the second year. Co-Op II begins in the spring semester of the third year. Co-op III begins in the fall semester of the fifth year. Any University credit granted for the Cooperative Education Program will not be applicable to minimum credit requirements for graduation as a chemistry major. For further information concerning the Cooperative Education Program, consult University policies which appear elsewhere in this publication under the heading "Academic Policies: Cooperative Education."

Summary of Degree Requirements for Bachelor of Arts Curricula

I University Core Requirements	23
Physical Education	2
English Composition	6
Area I (Behavioral & Social Sciences)	6-9*
Area II (Fine Arts & Humanities)	6-9*
Area III (Mathematics & Sciences)	(12)+

*A minimum of two courses and six credits must be presented in each of the three areas of the University Core Requirements. An additional three courses and nine credits must be presented from among the three areas of the University Core Requirements. Students may not present more than three courses and nine credits from the offerings of any one department (except that not more than two courses and six credits may be presented from the offerings of the English Department) and may not present more than four courses and twelve credits in any one distribution area.

+Area III requirement is satisfied by specified physics and mathematics courses of the Major Field Requirements for Supporting Sciences & Mathematics.

II Major Field Requirements#

61-64

A Chemistry*	36
84-121: Chemistry	3
84-123: Chemistry Laboratory	1
84-126: Chemistry	3
84-124: Chemistry Laboratory or	1
84-135: Honors Chemistry	(3)
84-137: Honors Chemistry Laboratory	(1)
84-136: Honors Chemistry	(3)
84-138: Honors Chemistry Laboratory	(1)
84-221: Organic Chemistry IA	3
84-227: Organic Chemistry Laboratory I	1
84-222: Organic Chemistry IIA	3
84-228: Organic Chemistry Laboratory II	1
84-207: Inorganic Chemistry & Qualitative Analysis	4
84-313: Analytical Chemistry I	3
84-315: Analytical Chemistry I Laboratory	1
84-314: Analytical Chemistry II	3
84-316: Analytical Chemistry II Laboratory	1
84-344: Physical Chemistry I	3
84-346: Physical Chemistry Laboratory I	1
84-345: Physical Chemistry II	3
84-347: Physical Chemistry Laboratory II	1

*ACS accreditation requires additional courses beyond the chemistry core. Cf. ACS requirements above. Not more than 45 credits in chemistry may be credited to the minimum BA requirement of 122 credits.

B Supporting Sciences and Mathematics

25-28

95-201: Principles of Physics I	3
96-201: Principles of Experimental Physics I	1
95-202: Principles of Physics II	3
96-202: Principles of Experimental Physics II	1
92-131: Calculus I-B and	4
92-132: Calculus II-B and	4
92-231: Calculus III-B or	4
92-133: Calculus I-A	(4)
92-134: Calculus II-A	(4)
92-233: Calculus III-A	(3)

Science electives to achieve a total of 60 credits in science and mathematics, including two additional science courses exclusive of mathematics and chemistry

6-8

III Program Options#

A minimum of 29 credits (in addition to Area I and Area II) must be taken from course offerings of the College of Liberal Arts, the College of Music, and the economics offerings of the College of Management Science. These courses are selected by students in accordance with their needs, interests, and talents, and in consultation with faculty advisors. Minor areas of study* may be selected in the College of Liberal Arts. A minor in economics* also may be selected in the College of Management Science.

*Minors require 18-24 credits and six courses with a minimum of 6 credits at the 300 course level or above. Requirements are established by concerned departments.

IV Unrestricted Elective Courses#	6-9
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V Minimum Credit Requirement	122
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#Courses which are prerequisites for physics, chemistry, and mathematics courses of the Major Field Requirements, or courses which are prerequisites for admission to the College of Pure and Applied Sciences, may not be credited to requirements for a baccalaureate degree in chemistry.

Summary of Degree Requirements for Bachelor of Science Curricula

I University Core Requirements	23
Physical Education	2
English Composition	6
Area I (Behavioral & Social Sciences)	6-9*
Area II (Fine Arts & Humanities)	6-9*#
Area III (Mathematics & Sciences)	(12)+

*A minimum of two courses and six credits must be presented in each of the three areas of the University Core Requirements. An additional three courses and nine credits must be presented from among the three areas of the University Core Requirements. Students may not present more than three courses and nine credits from the offerings of any one department (except that not more than two courses and six credits may be presented from the offerings of the English Department) and may not present more than four courses and twelve credits in any one distribution rea.

+ Area III requirement is satisfied by specified physics and mathematics courses of the Major Field Requirements for Supporting Sciences & Mathematics.

#Six credits of a foreign language are required. These credits may be used for unrestricted electives but may not be used to fulfill the Area II Requirement.

II Major Field Requirements#	64-71
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A Chemistry*	36
84-121: Chemistry	3
84-123: Chemistry Laboratory	1
84-126: Chemistry	3
84-124: Chemistry Laboratory or	1
84-135: Honors Chemistry	(3)
84-137: Honors Chemistry Laboratory	(1)
84-136: Honors Chemistry	(3)
84-138: Honors Chemistry Laboratory	(1)
84-221: Organic Chemistry IA	3
84-227: Organic Chemistry Laboratory I	1
84-222: Organic Chemistry IIA	3
84-228: Organic Chemistry Laboratory II	1
84-207: Inorganic Chemistry & Qualitative Analysis	4
84-313: Analytical Chemistry I	3
84-315: Analytical Chemistry Laboratory I	1
84-314: Analytical Chemistry II	3
84-316: Analytical Chemistry Laboratory II	1
84-344: Physical Chemistry I	3
84-346: Physical Chemistry Laboratory I	1
84-345: Physical Chemistry II	3
84-347: Physical Chemistry Laboratory II	1

*The minimum chemistry requirement for ACS certification is 44 credits. Cf. ACS program requirements under the general statement concerning the chemistry major.

B	Physics	12-17
95-141:	Physics I or	3
94-147:	Honors Physics I	(4)
96-147:	Fundamentals of Experimental Physics I (Honors)	1
95-144:	Physics II or	3
95-148:	Honors Physics II	(4)
96-148:	Fundamentals of Experimental Physics II (Honors)	1
95-245:	Physics III or	3
95-247:	Honors Physics III	(4)
96-245:	Fundamentals of Experimental Physics III or	1
96-293:	Experimental Physics I	(3)

C	Mathematics	16-18
92-131:	Calculus I-B	4
92-132:	Calculus II-B	4
92-231:	Calculus III-B	4
92-232:	Calculus IV-B or	4
92-131:	Calculus I-B	(4)
92-232:	Calculus II-B	(4)
92-131:	Calculus III-B	(4)
*92-383:	Introduction to Statistics or	(3)
92-133:	Calculus I-A	(4)
92-134:	Calculus II-A	(4)
92-233:	Calculus III-A	(3)
92-234:	Differential Equations or	(3)
92-133:	Calculus I-A	(4)
92-134:	Calculus II-A	(4)
92-233:	Calculus III-A	(3)
*92-383:	Introduction to Statistics	(3)
92-361:	Digital Computer Programing	2

*92-383 is strongly recommended.

III Allied Courses# 18-24

The required chemistry minimums permit students to elect limited programs outside the Department of Chemistry for the purpose of developing specific interests. In consultation with their advisors, students may choose a minor of 18-24 credits or may wish to consider the following groups of electives as preparation for various fields allied with chemistry. A minimum of 6 credits at the 300 - 400 course levels is required for all minors.

Business Administration Electives		Chemical Energy Electives	
66-200: The Business System	3	10-431: Coal Technology	3
60-201: Accounting Principles I	3	10-434: Petrochemicals	3
60-202: Accounting Principles II	3	16-471: Energy Conversion	3
64-201: Economics I	3	80-201: Physics of Radiation	3
64-202: Economics II	3	80-202: Physics of Nuclei	3
* 64-211: Statistics I	3	84-351: Chemistry of Fossil Fuels	
* 64-212: Statistics II	3	Coal and Oil Shale	3
		84-352: Chemistry of Fossil Fuels	
		Petroleum and Natural Gas	3

*Students may not receive credit for both 92-383 and 64-211, 212.

Chemical Engineering Electives

10-203: Introduction to Chemical Engineering	3
10-204: Chemical Engineering Calculus	3
10-206: Fluid Mechanics	3
10-305: Heat Transfer	3
10-306: Transport Phenomena	3
10-409: Economic and Process Analysis	3
10-310: Separation Processes	3

The chemical engineering sequence prepares the student to enter a master's program in chemical engineering with minimum deficiencies in instrumentation, controls, and reaction kinetics.

Materials Science Electives

10-308: Engineering Materials	3
22-395: Materials Science	3
26-201: Polymeric Materials I	3
26-202: Polymeric Materials II	3
84-403: Introductory Polymer Science I	3
84-404: Introductory Polymer Science II	3
84-405: Polymer Laboratory I	1
84-406: Polymer Laboratory II	1

Electrochemistry Electives

16-201: Introductory Circuit Theory I	4
16-207: Electrical Engineering Laboratory	2
16-202: Introductory Circuit Theory II	4
16-208: Electrical Engineering Laboratory	2

IV Unrestricted Elective Courses#

4-17

#Prerequisites for physics, chemistry, and mathematics courses of the Major Field Requirements, or courses which are prerequisites for admission to the College of Pure and Applied Sciences, may not be credited to requirements for a baccalaureate degree in chemistry. All Bachelor of Science programs require, as a minimum, 74 credits and 20 courses from the offerings of the College of Pure and Applied Sciences.

V Minimum Credit Requirement

122

Chemistry Minor

A minor in chemistry consists of 18-24 credits in chemistry, exclusive of any course work taken to satisfy the Area III requirement. All course prerequisites must be satisfied. The course requirements for the chemistry minor are as follows:

- A freshman level course (84-121, 123 and 84-122, 124) or the equivalent must be included.
- Beyond the required freshman level course, four additional courses are required, of which not more than two may be from the same chemistry area.
- At least two courses must carry a laboratory component, exclusive of 84-121, 123 and 84-126, 122 or its equivalent.
- A lecture course with a corresponding separate laboratory course will be considered as one course for the additional course requirement.
- At least eight semester hours must be taken at or above the 300 course level.

SAMPLE COURSE OF STUDY FOR CHEMISTRY
(Bachelor of Arts Degree)

Freshman Year

Fall Semester		Spring Semester	
* 84-121 Chemistry	3	* 84-126 Chemistry	3
* 84-123 Chemistry Laboratory	1	* 84-124 Chemistry Laboratory	1
95-201 Principles of Physics I	3	95-202 Principles of Physics II	3
96-201 Principles of Experimental Physics	1	96-202 Principles of Experimental Physics	1
* 92-131 Calculus B-I	4	* 92-132 Calculus B-II	4
42-101 College Writing	3	42-102 College Writing & Literature	3
39 Physical Education	1	39 Physical Education	1
<hr/>		<hr/>	
16		16	

Sophomore Year

Fall Semester		Spring Semester	
84-221 Organic Chemistry IA	3	84-222 Organic Chemistry IIA	3
84-227 Organic Chemistry Laboratory	1	84-228 Organic Chemistry Laboratory	1
* 92-231 Calculus B-III	4	84-344 Physical Chemistry I	3
84-207 Inorganic Chemistry	4	84-346 Physical Chemistry Laboratory I	1
Electives+	3-6	Electives+	6-9
<hr/>		<hr/>	
15-18		14-17	

Junior Year

Fall Semester		Spring Semester	
84-313 Analytical Chemistry I	3	84-314 Analytical Chemistry II	3
84-315 Analytical Chemistry Laboratory	1	84-316 Analytical Chemistry Laboratory	1
84-345 Physical Chemistry II	3	Electives+#	12-14
84-347 Physical Chemistry Laboratory II	1		
Electives+#	8-9		
<hr/>		<hr/>	
16-17		16-18	

Senior Year

Fall Semester		Spring Semester	
Electives+#	14-16	Electives+#	14-16

*Cf. Summary of Degree Requirements for listings of approved alternative courses.

+University Core Requirements, Supporting Sciences & Mathematics, liberal arts, music, or economics courses, or general electives.

#For American Chemical Society approved programs of study, 84-334, 84-419, 84-403 or 84-503 is required.

The following are recommended chemistry electives with laboratory hours:

84-321 (1-6) 3;	84-342 (1-6) 3;	84-405 (0-4) 1;	84-406 (0-4) 1;
84-407 (0-9) 3;	84-408 (0-9) 3;	84-421 (0-4) 1;	84-481 (2-3) 3;
84-482 (2-3) 3;	85-516 (1-6) 3.		

Cf. ACS program requirements under general statement concerning the chemistry major.

SAMPLE COURSE OF STUDY FOR CHEMISTRY
(Bachelor of Science Degree)

Freshman Year

Fall Semester		Spring Semester	
* 84-121 Chemistry	3	* 84-126 Chemistry	3
* 84-123 Chemistry Laboratory	1	* 84-124 Chemistry Laboratory	1
* 95-141 Physics I	3	* 95-144 Physics II	3
96-147 Fundamentals of Experimental Physics (Honors) I	1	96-144 Fundamentals of Experimental Physics (Honors) II	1
* 92-131 Calculus B-I	4	* 92-132 Calculus B-II	4
42-101 College Writing	3	42-102 College Writing & Literature	3
39 Physical Education	1	39 Physical Education	1
	<hr/> 16		<hr/> 16

Sophomore Year

Fall Semester		Spring Semester	
84-221 Organic Chemistry IA	3	84-222 Organic Chemistry IIA	3
84-227 Organic Chemistry Laboratory I	1	84-228 Organic Chemistry Laboratory II	1
* 92-231 Calculus B-III	4	* 92-383 Introduction to Statistics	4
* 95-245 Physics III	3	92-261 Digital Computer Programming	2
* 96-245 Fundamentals of Experimental Physics III	1	84-344 Physical Chemistry I	3
84-207 Inorganic Chemistry	4	84-346 Physical Chemistry Laboratory I	1
	<hr/> 16	Electives+	6-9
			<hr/> 14-17

Junior Year

Fall Semester		Spring Semester	
84-313 Analytical Chemistry I	3	84-314 Analytical Chemistry II	3
84-315 Analytical Chemistry Laboratory I		84-316 Analytical Chemistry Laboratory	1
* 84-345 Physical Chemistry I	3	Foreign Language	3
84-347 Physical Chemistry Laboratory II	1	Electives+#	9
Foreign Language	3		
Electives+	6		
	<hr/> 17		<hr/> 16

Senior Year

Fall Semester		Spring Semester	
Electives+#	15-16	Electives+#	15-16

*Cf. Summary of Degree Requirements for listings of approved alternative courses.

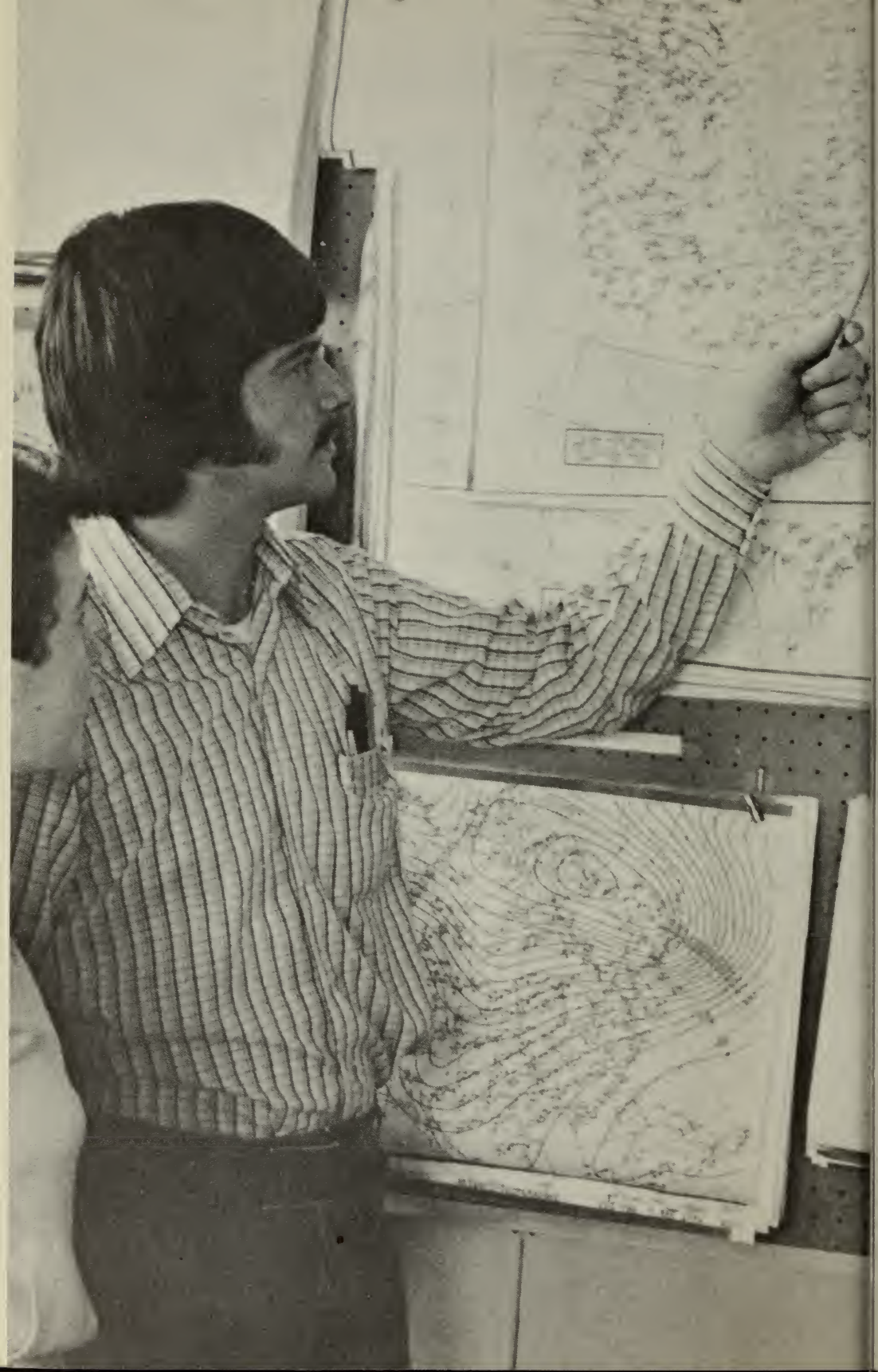
+University Core Requirements, minor or allied field electives, and general electives.

#For American Chemical Society approved programs of study, 84-334, 84-419, 84-403, or 84-503 is required.

The following are recommended chemistry electives with laboratory hours:

84-321 (1-6) 3;	84-342 (1-6) 3;	84-405 (0-4) 1;	84-406 (0-4) 1;
84-407 (0-9) 3;	84-408 (0-9) 3;	84-421 (0-4) 1;	84-481 (2-3) 3;
84-482 (2-3) 3;	84-516 (1-6) 3.		

For further information, see ACS requirements under the general statement concerning the chemistry major.



DEPARTMENT OF EARTH SCIENCES

Arnold O'Brien, Chairperson

Professor: Robert C. Curtis

Associate Professors: G. Nelson Eby, Richard Gore, Arnold L. O'Brien, Wen Tang

Assistant Professor: Robert J. Mathieu

The Department of Earth Sciences offers major programs in environmental sciences and meteorology and a minor area of study in geology. The meteorology major leads to the Bachelor of Science degree. The environmental sciences major is offered with two options; the first leads to the Bachelor of Arts degree and the second (with a geology option) leads to the Bachelor of Science degree.

Environmental Science Major

The major in environmental sciences is a broad-based, interdisciplinary program which is designed to provide students with an understanding of the complex inter-relationships which exist at the earth's surface. The program, which is offered with options leading to the Bachelor of Arts and Bachelor of Science degrees, focuses on physical and biological systems but also recognizes the related nature of social and economic studies. A major in environmental science will prove useful for students planning to pursue graduate work in environmental studies and in education or who wish to pursue environmentally oriented careers in business, government, and industry.

The Bachelor of Arts degree program is designed for students who wish to obtain a broad-based background in the sciences and related humanities and social sciences. A number of unrestricted elective courses permit maximum flexibility in designing a program of study which will satisfy personal goals within the context of individual competencies. Students pursuing the Bachelor of Arts degree program must complete a minimum of 50 credits and 15 courses from the offerings of the College of Liberal Arts, the College of Music, or the economics offerings of the College of Management Science.

For those students who are interested in the field of geology, an option in this field is provided within the framework of the Bachelor of Science degree program. A major in environmental science with an option in geology will provide a basic foundation for subsequent studies in such subfields of applied geology as mineral exploration and exploitation, engineering geology, geologic hazard evaluation, and energy resource development. For the student possessing the necessary science competencies, a wide range of career opportunities is available. These opportunities range from studies of the oceans and the solid earth to the origin of the earth and other astronomical bodies. Students planning to pursue such career opportunities should recognize that training at the graduate level is required in most cases.

Summary of Degree Requirements for Bachelor of Arts Curricula

I	University Core Requirements	23
	Physical Education	2
	English Composition	6
	Area I (Behavioral & Social Sciences)	6-9*
	Area II (Fine Arts & Humanities)	6-9*
	Area III (Mathematics & Sciences)	(12)+

*A minimum of two courses and six credits must be presented in each of the three areas of the University Core Requirements. An additional three courses and nine credits must be presented from among the three areas of the University Core Requirement. Students may not present more than three courses and nine credits from the offerings of any one department (except that not more than two courses and six credits may be presented from the offerings of the English Department) and may not present more than four courses and twelve credits in any one distribution area.

+Area III requirement is satisfied by specified science and mathematics courses of the Major Field Requirements for Supporting Sciences & Mathematics.

II Major Field Requirements# 77-84

A Environmental Sciences 25

87-101:	Introduction to Environmental Sciences	1
87-102:	Foundations of Conservation	3
87-232:	Atmospheric Science	3
87-234:	Atmospheric Science Laboratory	1
87-401:	Seminar in Environmental Sciences	3
89-203:	Oceanography	3
89-205:	Oceanography Laboratory	1
89-213:	Environmental Geology	3
89-314:	Hydrogeology	3
81-315:	Principles of Ecology	2
81-317:	Principles of Ecology Laboratory	2

B Area of Focus 14-16

Environmental science majors must elect a minimum of four courses (14 or more semester credits) from one of the following three categories:

1. Biological Aspects of Environmental Science

81-201:	General Microbiology	3
81-203:	General Microbiology Laboratory	1
81-302:	Developmental Biology	3
81-304:	Experimental Morphogenesis	1
81-335:	Genetics	3
81-337:	Genetics Laboratory	1
81-422:	Plant Physiology	3
81-424:	Plant Physiology Laboratory	1
82-215:	Introduction to Marine Biology	2
82-217:	Introduction to Marine Biology Laboratory	1
82-346:	Introductory Entomology	2
82-348:	Introductory Entomology Laboratory	1
82-347:	Ornithology	2
82-349:	Ornithology Laboratory	1
82-354:	Wildlife & Environmental Management	3

2. Geological Aspects of Environmental Science

89-208:	Paleontology	3
89-210:	Paleontology Laboratory	1
89-251:	Mineralogy	3
89-253:	Mineralogy Laboratory	1
89-301:	Optical Mineralogy	3

89-303: Optical Mineralogy Laboratory	1
89-304: Igneous and Metamorphic Petrology	3
89-306: Igneous and Metamorphic Petrology Laboratory	1
89-316: Geomorphology	3
89-318: Geomorphology Laboratory	1
89-322: Structural Geology	3
89-324: Structural Geology Laboratory	1
89-352: Stratigraphy and Sedimentation	3
89-354: Stratigraphy and Sedimentation Laboratory	1
89-452: Geochemistry	3
3. Chemical Aspects of Environmental Science	
84-207: Inorganic Chemistry	4
84-221: Organic Chemistry I A	3
84-222: Organic Chemistry II A	3
84-227: Organic Chemistry Laboratory I	1
84-228: Organic Chemistry Laboratory II	1
84-313: Analytical Chemistry I	3
84-314: Analytical Chemistry II	3
84-315: Analytical Chemistry Laboratory I	1
84-316: Analytical Chemistry Laboratory II	1
84-335: Principles of Physical Chemistry I	3
84-337: Principles of Physical Chemistry Laboratory I	1
84-342: Organic Qualitative Analysis	3
C Supporting Sciences and Mathematics	38-43
1. 92-131: Calculus B-1 or 92-133: Calculus A-1 and two additional mathematical courses	10-12
2. 81-111, 113: Principles of Biology I and Laboratory and 81-112, 114: Principles of Biology II and Laboratory	8
3. 84-121, 123: Chemistry I and Chemistry I Laboratory plus 84-122, 124: Chemistry II and Chemistry II Laboratory	8
4. Two semesters of introductory physics	8-11
5. 89-121, 123: Physical Geology and Laboratory	4
III Elective Courses	29

Students pursuing the Bachelor of Arts degree are required, at a minimum, to take 29 credits from the offerings of the College of Liberal Arts, the College of Music, or the economics offerings of the College of Management Science. These courses* are selected by students in accordance with their needs, talents, and interests and in consultation with their faculty advisors.

*Minor areas of study require a minimum of 6 credits at the 300-400 level.

IV Minimum Credit Requirement 129

#Prerequisites for courses of the Major Field Requirements, or courses which are prerequisites for admission to the College of Pure and Applied Sciences, may not be credited to requirements for degrees in the College of Pure and Applied Sciences.

Summary of Degree Requirements for Bachelor of Science Curricula (Geology Option)

I University Core Requirements	23
Physical Education	2
English Composition	6
Area I (Behavioral & Social Sciences)	6-9*
Area II (Fine Arts & Humanities)	6-9*
Area III (Mathematics & Sciences)	(12)+

*A minimum of two courses and six credits must be presented in each of the three areas of the University Core Requirements. An additional three courses and nine credits must be presented from among the three areas of the University Core Requirement. Students may not present more than three courses and nine credits from the offerings of any one department (except that not more than two courses and six credits may be presented from the offerings of the English Department) and may not present more than four courses and twelve credits in any one distribution area.

+Area III requirement is satisfied by specified science and mathematics courses of the Major Field Requirements for Supporting Sciences & Mathematics.

II Major Field Requirements#	92-96
A Environmental Sciences	22
87-101: Introduction to Environmental Sciences	1
87-102: Foundations of Conservation	3
87-232: Atmospheric Science	3
87-234: Atmospheric Science Laboratory	1
87-401: Seminar in Environmental Science I	3
89-203: Oceanography	3
89-205: Oceanography Laboratory	1
89-314: Hydrogeology	3
81-315: Principles of Ecology	2
81-317: Principles of Ecology Laboratory	2
B Geology Option	31
89-208: Paleontology	3
89-210: Paleontology Laboratory	1
89-251: Mineralogy	3
89-253: Mineralogy Laboratory	1
89-301: Optical Mineralogy	3
89-303: Optical Mineralogy Laboratory	1
89-304: Igneous and Metamorphic Petrology	3
89-306: Igneous and Metamorphic Petrology Laboratory	1
89-316: Geomorphology	3
89-318: Geomorphology Laboratory	1
89-322: Structural Geology	3
89-324: Structural Geology Laboratory	1
89-352: Stratigraphy & Sedimentation	3
89-354: Stratigraphy & Sedimentation Laboratory	1
Geology Elective	
89-326: Glacial and Pleistocene Geology or	
89-431: Regional Geology or	
89-452: Geochemistry	
C Supporting Sciences and Mathematics	39-43
1. 92-131: Calculus B-I or 92-133: Calculus A-I	4
92-132: Calculus B-II or 92-134: Calculus A-II, and one additional mathematics course	7-8
2. 81-111, 113: Principles of Biology I and Laboratory	4
81-112, 114: Principles of Biology II and Laboratory	4

3. 84-121, 123: Chemistry and Chemistry Laboratory plus	4
84-122, 124: Chemical Principles and Laboratory	4
4. 95-201, 202 and 96-201, 202: Principles of Physics and Laboratory or	8
95-141, 144, 245 and 96-141, 144, 245: Physics and Laboratory	(11)
5. 89-121, 123: Physical Geology and Laboratory	4

III Unrestricted Elective Courses#	3-12
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IV Minimum Credit Requirement	125
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#Prerequisites for courses of the Major Field Requirements, or courses which are prerequisites for admission to the College of Pure and Applied Sciences, may not be credited to requirements for degrees in the College of Pure and Applied Sciences.

Meteorology Major

The meteorology major is offered under the requirements of the College of Pure and Applied Sciences for the Bachelor of Science degree. The goal of the meteorology program is to provide students with a knowledge of the fundamental principles and techniques of physics and mathematics which is necessary for understanding atmospheric behavior and for solving practical problems concerning weather and climate. Because meteorology is primarily the application of the principles and techniques of physical sciences to the study of the atmosphere, the meteorology curriculum specifies a substantial core of supporting science and mathematics courses. In order to be admitted to the meteorology major at the beginning of the sophomore year, a student must have a cumulative grade-point average of at least 2.00 for the specified freshman curriculum and grades of at least "C" in each of the specified freshman mathematics and physics courses.

The work of the meteorologist is concentrated on the effort to understand the physical causes of weather and climate and to apply this knowledge to the solution of practical problems ranging from the forecasting of weather to the analysis of the influence of weather and climate on public health, agriculture, engineering, industry and commerce, and national defense. Meteorologists are employed by the agencies of the federal government, the National Oceanic and Atmospheric Administration, the National Weather Service, and the Department of Defense, as well as by agencies of state and local governments, and by commercial aviation companies and private consulting firms. Meteorology students who wish to continue their studies at the graduate level are advised to develop competencies in science and mathematics beyond those which are mandated by the supporting science and mathematics core.

Summary of Degree Requirements

I University Core Requirements	23
Physical Education	2
English Composition	6
Area I (Behavioral & Social Sciences)	6-9*
Area II (Fine Arts & Humanities)	6-9*
Area III (Mathematics & Sciences)	(12)+

*A minimum of two courses and six credits must be presented in each of the three areas of the University Core Requirements. An additional three courses and nine credits must be presented from among the three areas of the University Core Requirements. Students may not present more than three courses and nine credits from the offerings of any one department (except that not more than

two courses and six credits may be presented from the offerings of the English Department) and may not present more than four courses and twelve credits in any one distribution area.

+ Area III requirement is satisfied by specified science and mathematics courses of the Major Field Requirements for Supporting Sciences & Mathematics.

II Major Field Requirements#	82-84
A Meteorology	33
93-211: Elementary Meteorology I	3
93-212: Elementary Meteorology II	3
93-301: Atmospheric Dynamics I	3
93-302: Atmospheric Dynamics II	3
93-308: Synoptic Meteorology	3
93-313: Physical Climatology	3
93-403: Physical Meteorology	3
93-415: Advanced Atmospheric Dynamics	3
93-421: Analysis and Forecasting I	3
93-422: Analysis and Forecasting II	3
93-430: Atmospheric Diffusion	3
B Chemistry	8
84-121: Chemistry	3
84-123: Chemistry Laboratory	1
84-122: Chemistry	3
84-124: Chemistry Laboratory	1
C Mathematics	25-27
92-131: Calculus B-I	4
92-133: Calculus A-I	(4)
92-132: Calculus B-II	4
92-134: Calculus A-II	(4)
92-231: Calculus B-III	4
92-233: Calculus A-III	(3)
92-234: Differential Equations	3
92-301: Applied Mathematics I	3
92-302: Applied Mathematics II	3
92-361: Digital Computer Programming	2
92-383: Introduction to Statistics	3
D Physics	16
95-141: Physics I	3
96-141: Fundamentals of Experimental Physics I	1
95-144: Physics II	3
96-144: Fundamentals of Experimental Physics II	1
95-245: Physics III	3
96-245: Fundamentals of Experimental Physics III	1
95-246: Special Topics in Physics	4
96-246: Fundamentals of Experimental Physics IV	1
III Science or Engineering Electives#	16-18

The Major Field Requirements permit students to elect limited programs for the purpose of developing specific interests. In consultation with their advisors, students may choose a minor, additional elective courses in meteorology, science, and mathematics, or may elect the following engineering courses as preparation for various fields allied with meteorology. A minimum of 6 credits at the 300 - 400 course levels is required for all minors.

14-301: Hydraulics	4
14-460: Water Resources Engineering	4
16-211: Fundamentals of Electricity	3
16-212: Introductory Electronics	3
22-242: Thermodynamics	3

22-343:	Heat Transfer	3
22-382:	Fluid Mechanics	3
22-483:	Aerodynamics	3
18-523:	Air Resources	3

IV Minimum Credit Requirement 123

*Prerequisites for courses of the Major Field Requirements, or courses which are prerequisites for admission to the College of Pure and Applied Sciences, may not be credited to requirements for degrees in the College of Pure and Applied Sciences.

Geology Minor

A minor in geology consists of 89-121: Physical Geology and five courses from the following listing, two of which must be at the 300 course level or above.

- 89-208: Paleontology
- 89-251: Mineralogy
- 89-301: Optical Mineralogy
- 89-304: Igneous and Metamorphic Petrology
- 89-314: Hydrogeology
- 89-316: Geomorphology
- 89-322: Structural Geology



SAMPLE COURSE OF STUDY FOR ENVIRONMENTAL SCIENCES
(Bachelor of Arts Degree)

Freshman Year

Fall Semester		Spring Semester	
42-101 College Writing	3	42-102 College Writing & Literature	3
84-121 Chemistry	3	84-122 Chemistry	3
84-123 Chemistry Laboratory	1	84-124 Chemistry Laboratory	1
92-131 Calculus B-I	4	87-102 Foundations of Conservation	3
89-121 Physical Geology	3	92 Mathematics Elective	3-4
89-123 Physical Geology Laboratory	1	Elective (Area I or II)	3
87-101 Introduction to Environmental Science	1	39 Physical Education	1
39 Physical Education	1		
	17		17-18

Sophomore Year

Fall Semester		Spring Semester	
81-111 Principles of Biology I	3	81-112 Principles of Biology II	3
81-113 Principles of Biology I Laboratory	1	81-114 Principles of Biology II Laboratory	1
95-201 Principles of Physics I	3	95-202 Principles of Physics II	3
96-201 Principles of Physics I Laboratory	1	96-202 Principles of Physics II Laboratory	1
89-213 Environmental Geology	3	89-314 Hydrogeology	3
92 Mathematics Elective	3-4	Elective (Area I or II)	3
Elective (Area I or II)	3	Elective (Liberal Arts)	3
	17-18		17

Junior Year

Fall Semester		Spring Semester	
89-203 Oceanography	3	87-232 Atmospheric Science	3
89-205 Oceanography Laboratory	1	87-234 Atmospheric Science Laboratory	1
81-315 Principles of Ecology	3	Elective (Focus)	4
81-317 Principles of Ecology Laboratory	1	Elective (Area I or II)	3
Elective (Focus)	4	Elective (Liberal Arts)	4
Elective (Area I or II)	3		
	15		15

Senior Year

Fall Semester		Spring Semester	
87-401 Environmental Science Seminar	3	Elective (Focus)	3-4
Elective	3-4	Electives (Liberal Arts)	12
Electives (Liberal Arts)	9		
	15-16		15-16

SAMPLE COURSE OF STUDY FOR ENVIRONMENTAL SCIENCES — GEOLOGY OPTION
(Bachelor of Science Degree)

Freshman Year

Fall Semester

42-101 College Writing	3
84-121 Chemistry	3
84-123 Chemistry Laboratory	1
92-131 Calculus B-I	4
89-121 Physical Geology	3
89-123 Physical Geology Laboratory	1
87-101 Introduction to Environmental Science	1
39 Physical Education	1
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17

Spring Semester

42-102 College Writing & Literature	3
84-122 Chemistry	3
84-124 Chemistry Laboratory	1
87-102 Foundations of Conservation	3
92-132 Calculus B-II	4
Elective (Area I or II)	3
39 Physical Education	1
	<hr/>

18

Sophomore Year

Fall Semester

81-111 Principles of Biology I	3
81-113 Principles of Biology I Laboratory	1
95-201 Principles of Physics I	3
96-201 Principles of Physics I Laboratory	1
89-322 Structural Geology	3
89-324 Structural Geology Laboratory	1
92 Mathematics Elective	3-4
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15-16

Spring Semester

81-112 Principles of Biology II	3
81-114 Principles of Biology II Laboratory	1
95-202 Principles of Physics II	3
96-202 Principles of Physics II Laboratory	1
89-315 Hydrogeology	3
89-316 Geomorphology	3
89-318 Geomorphology Laboratory	1
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Junior Year

Fall Semester

89-203 Oceanography	3
89-205 Oceanography Laboratory	1
81-315 Principles of Ecology	3
81-317 Principles of Ecology Laboratory	1
89-251 Mineralogy	3
89-253 Mineralogy Laboratory	1
89-208 Paleontology	3
89-210 Paleontology Laboratory	1
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16

Spring Semester

87-232 Atmospheric Science	3
87-234 Atmospheric Science Laboratory	1
89-301 Optical Mineralogy	3
89-303 Optical Mineralogy Laboratory	1
89-352 Stratigraphy & Sedimentation	3
89-354 Stratigraphy & Sedimentation Laboratory	1
Elective (Area I or II)	3
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15

Senior Year

Fall Semester

87-407 Environmental Science Seminar	3
89-304 Petrology	3
89-306 Petrology Laboratory	1
Elective (Area I or II)	6
Elective	3
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16

Spring Semester

Geology Elective	3
Elective (Area I or II)	3
Electives	9
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SAMPLE COURSE OF STUDY FOR METEOROLOGY

(Bachelor of Science Degree)

Freshman Year

Fall Semester

84-121 Chemistry	3
84-123 Chemistry Laboratory	1
* 92-131 Calculus B-I	4
95-141 Physics I	3
96-141 Fundamentals of Experimental Physics	1
42-101 College Writing	3
39 Physical Education	1
	<hr/> 16

Spring Semester

84-122 Chemistry	3
84-124 Chemistry Laboratory	1
* 92-132 Calculus B-II	4
95-144 Physics II	3
96-144 Fundamentals of Experimental Physics II	1
42-102 College Writing & Literature	3
39 Physical Education	1
	<hr/> 16

Sophomore Year

Fall Semester

* 92-231 Calculus B-III	4
92-361 Digital Computer Programming	2
92-211 Elementary Meteorology	3
95-245 Physics III	3
96-245 Fundamentals of Experimental Physics III	1
Elective (Area I or II)	3
	<hr/> 16

Spring Semester

* 92-234 Differential Equations	3
92-383 Introduction to Statistics	3
93-212 Elementary Meteorology	3
95-246 Special Topics in Physics	4
96-246 Fundamentals of Experimental Physics IV	1
Elective (Area I or II)	3
	<hr/> 17

Junior Year

Fall Semester

92-301 Applied Mathematics I	3
93-301 Atmospheric Dynamics	3
93-308 Synoptic Meteorology	3
Elective (Area I or II)	3
Elective (Science or Engineering)	3-4
	<hr/> 15-16

Spring Semester

92-302 Applied Mathematics II	3
93-302 Atmospheric Dynamics	3
93-313 Physical Climatology	3
Elective (Area I or II)	3
Elective (Science or Engineering)	3-4
	<hr/> 15-16

Senior Year

Fall Semester

93-403 Physical Meteorology	3
93-415 Advanced Atmospheric Dynamics	3
93-421 Analysis & Forecasting	3
Elective (Area I or II)	3
Elective (Science or Engineering)	3-4
	<hr/> 15-16

Spring Semester

93-422 Analysis and Forecasting	3
93-430 Atmospheric Diffusion	3
Electives (Science or Engineering)	6-8
Elective	3
	<hr/> 15-17

*Cf. Summary of Degree Requirements for listings of approved alternative courses.





DEPARTMENT OF MATHEMATICS

Alan Doerr, Chairperson

Professors: Stephen Bodor, Robert Devejian, M. Brendan Fleming, Thomas McElligott, Joseph Neuringer, Andrew Ouellette, Bernard Shapiro, I Jacob Weinberg

Associate Professors: Walter Copley, Thomas Costello, Alan Doerr, Robert Gravina, Garfield Schmidt, Arthur Talkington, Virginia Taylor

Assistant Professors: Donald Ameen, Leonard Andrusaitis, Shimshom Berkovits, Pasquale Condo, Angelo Dadoly, Enrique Gonzalez-Velasco, Michael Grossman, Gerald Kaiser, Alan Kaplan, Thomas Kudzma, William Moloney, Alexander Olsen, Ira Over, Jr., Mary Beth Ruskai, Stanley Spiegel, Joyce Williams, Richard Winslow

Instructors: Edward Baldyga, Joanne Costello, Ann Marie Hurley

The Department of Mathematics offers a major in mathematics which leads to the Bachelor of Science degree. The Department also offers a minor area of study.

Mathematics Major

The major in mathematics is designed to provide a sequence of courses which will acquaint the student with the important concepts underlying the main branches of mathematics. The mathematics major is offered under requirements of the College of Pure and Applied Sciences for the Bachelor of Science degree and requires, at a minimum, 74 credits and 20 courses from the offerings of the College. The mathematics major curriculum exceeds the minimum recommendations of the Committee on Undergraduate Programs in Mathematics of the Mathematical Association of America for college mathematics programs. It provides a valuable background for subsequent graduate study in mathematics, in mathematics related disciplines, and in education, and for employment in business and industry. Mathematics majors are required to select an area of mathematics emphasis in one of the following: applied mathematics, computer science, mathematical statistics (including actuarial science), mathematics.

Cooperative Education Program

The Department of Mathematics has formally adopted the voluntary University Cooperative Education Work Experience Program. This Program provides learning experiences for mathematics majors in their chosen careers, helps them to define their career goals, and can assist them in meeting their educational expenses. Students who are interested in this program should consult the Chairperson of the Department.

Honors in Mathematics

Selected mathematics students may qualify for honors in the major field. University requirements for major field honors are described elsewhere in this publication under the heading "Academic Policies: Academic Honors." The purpose of the honors program in mathematics is to give the conscientious and industrious student the special attention and recognition which his or her

superior interest and performance in mathematics warrant. Students who currently are registered for, or who have completed, 92-221 may petition for admission to the honors program. Interested students should consult with the Chairperson of the Department.

B.S./M.S. Program in Mathematics

Exceptional students are urged to design their mathematics programs in order to complete requirements for the Bachelor of Science and Master of Science degrees in five years. Students who wish to apply for B.S./M.S. Program should do so as early as possible in their undergraduate careers but should file an application no later than the end of the sophomore year. Interested students should contact the Coordinator of the M.S. Program for further details.

Summary of Degree Requirements

I University Core Requirements	23
Physical Education	2
English Composition	6
Area I (Behavioral & Social Sciences)	6-9*
Area II (Fine Arts & Humanities)	6-9*
Area III (Mathematics & Sciences)	(12)+

*A minimum of two courses and six credits must be presented in each of the three areas of the University Core Requirements. An additional three courses and nine credits must be presented from among the three areas of the University Core Requirements. Students may not present more than three courses and nine credits from the offerings of any one department (except that not more than two courses and six credits may be presented from the offerings of the English Department) and may not present more than four courses and twelve credits in any one distribution area.

+Area III requirement is satisfied by specified science courses of the Major Field Requirements for Supporting Sciences.

II Major Field Requirements	59
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Prerequisites for courses of the Major Field Requirements, or courses which are prerequisites for admission to the College of Pure and Applied Sciences, may not be credited to requirements for a baccalaureate degree in mathematics. All Bachelor of Science programs require, as a minimum, 74 credits and 20 courses from the offerings of the College of Pure and Applied Sciences.

A Core Requirements	41
92-133: Calculus A-I	4
92-134: Calculus A-II	4
92-233: Calculus A-III	3
92-234: Differential Equations	3
92-211: Fundamental Concepts	3
92-221: Linear Algebra	3
92-263: Introduction to Fortran	3
92-305: Introduction to Real Analysis I	3
92-306: Introduction to Real Analysis II	3
92-307: Probability and Mathematical Statistics I	3
92-308: Probability and Mathematical Statistics II	3
92-411: Complex Variables I	3
92-421: Abstract Algebra I	3
	18

B Option Requirements and Electives

Two courses at the 300 course level or above and two courses at the 400 or 500 course levels must be chosen in *one* of the areas of emphasis listed below. An additional 400 or 500 level course must also be elected, preferably in the student's area of emphasis. Academically qualified seniors are counselled by faculty advisors to select 500 level courses.

1. Applied Mathematics: 92-309, 92-362, 92-412, 92-401, 92-402, 92-511, 92-512, 92-543, 92-544, 92-545, 92-546, 92-563, 92-564, 92-571, 92-572
2. Computer Science: 92-362, 92-363, 92-365, 92-366, 92-367, 92-422, 92-460, 92-461, 92-462, 92-463, 92-464, 92-465, 92-466, 92-468, 92-469, 92-470, 92-471
3. Mathematical Statistics: 92-362, 92-366, 92-381, 92-382, 92-481, 92-482, 92-409, 92-416, 92-563, 92-564, 92-571, 92-572, 92-587, 92-588
4. Pure Mathematics: 92-309, 92-412, 92-422, 92-431, 92-432, 92-501, 92-502, 92-511, 92-512, 92-521, 92-522, 92-531

C Supporting Sciences

16

A minimum of two one-year science courses, with laboratory, is required. Twelve of the 16 required credits are applied to the Area III Requirement. Suggested courses are as follows:

Biological Sciences: 81-111, 81-113, 81-112, 81-114 (8)

Chemistry: 84-121, 84-123, 84-122, 84-124 (8)

Geology: 89-101, 89-102 (8)

Physics: 95-141, 95-144, 96-141, 96-144, or
95-201, 95-202, 96-201, 96-202 (8)

Radiological Sciences: 98-401, 98-402 (8)

III Allied Courses

24

A Minor Programs

Four additional semester sequences may be elected (a minimum of 14 credits) to complete requirements for a minor in either of the sciences which have been taken to satisfy the above requirements. At least 6 credits at the 300 course level or above must be taken to fulfill minor requirements. (14-20)

Minor programs in other areas are possible if approved in advance. Students who are interested in such programs should file an academic petition with the Department Chairperson. (18-24)

B Cognate Programs or Elective Courses

(0-24)

Other course configurations may be selected if approved in advance by the Department Chairperson. Students who are interested in such courses should file an academic petition with the Chairperson of the Department.

IV Minimum Credit Requirement

122

Mathematics Minor

A minor in mathematics consists of 18-24 credits chosen from the mathematics major core and option lists. At least 9 of such credits must be in mathematics courses not required by the student's major department. A minimum of 6 credits must be chosen from course offerings which are on or above the 300 course level.

SAMPLE COURSE OF STUDY FOR MATHEMATICS

(Bachelor of Science Degree)

Freshman Year

Fall Semester

92-133	Calculus A-I	4
42-101	College Writing	3
	Lab Science	3-4
92-263	Introduction to Fortran	3
39-	Physical Education	1
		<hr/>
		14-15

Spring Semester

92-134	Calculus A-II	4
42-102	College Writing & Literature	3
	Lab Science	3-4
	Unrestricted Elective	3
39	Physical Education	1
		<hr/>
		14-15

Sophomore Year

Fall Semester

92-233	Calculus A-III	3
92-211	Fundamental Concepts	3
	Lab Science	3-4
	Elective (Non-Math)	3
	Elective (Area I)	3
		<hr/>
		15-16

Spring Semester

92-234	Differential Equations	3
92-221	Linear Algebra	3
	Lab Science	3-4
	Elective (Non-Math)	3
	Elective (Area I)	3
		<hr/>
		15-16

Junior Year

Fall Semester

92-305	Intro to Real Analysis I	3
* 92-307	Probability & Mathematical Statistics I	3
	Mathematics Elective	3
	Elective (Non-Math)	3
	Elective (Area II)	3
		<hr/>
		15

Spring Semester

92-306	Intro to Real Analysis II	3
* 92-308	Probability & Mathematical Statistics II	3
	Mathematics Elective	3
	Unrestricted Elective	3
	Elective (Area II)	3
		<hr/>
		15

Senior Year

Fall Semester

92-421	Abstract Algebra I	3
	Mathematics Elective	3
	Mathematics Elective	3
	Unrestricted Elective	3
	Elective (Area I or II)	3
		<hr/>
		15

Spring Semester

+ 92-411	Complex Variables I	3
	Mathematics Elective	3
	Mathematics Elective	3
	Elective (Non-Math)	3
	Elective (Non-Math)	3
		<hr/>
		15

*Students who have selected an emphasis in pure mathematics may petition to substitute 92-302 and 92-308 with mathematics electives.

+ May be taken in second semester of the junior year.

DEPARTMENT OF PHYSICS & APPLIED PHYSICS

Gunter Kegel, Chairperson

Professors: Edward Alexander, Albert Altman, Adolph Baker, Leon Beghian, George Carr, Daniel Cole, Gus Couchell, Zoltan Fried, F. Raymond Hardy, Jesse Harris, Lloyd Kannenberg, Gunter Kegel, David Korff, Anthony Luizzi, Suresh Mathur, Arthur Miller, M. Ali Omar, David Pullen, Walter Schier, Eric Sheldon, Kenneth Skrable, Malcolm Smith, Martin Wilner, Francis Worrell

Associate Professors: Luther Barcus, James Egan, Padmanabh Harihar, Aram Karakashian, Roger McLeod, Walter Mellen, Arthur Mittler, Paul Ring, Kunnat Sebastian, Ye-Yung Teng,

Jerry Waldman

Assistant Professors: Thomas Marcella, Alexander Sachs, Richard Stimets, Chuen Wong

The Department of Pure & Applied Physics offers majors in physics (with options in pure physics, applied physics, and optics) and radiological health physics which lead to the Bachelor of Science degree. The Department also offers a minor area of study in physics.

Physics Major

Physics is the study of the fundamental laws of nature which govern the behavior of all matter. The major serves a variety of goals and interests and provides a broad, comprehensive background in both experimental and theoretical physics which will prove useful for science-oriented careers in business and industry, for subsequent graduate work in professional schools of business, education, law, medicine, and public administration, and for continued study at the master's and doctor's levels. Because of the precise and theoretical nature of physics, students who plan to major in this discipline must possess a high level of mathematical competence.

Program options permit the student to select a structured curriculum in pure physics which provides rigorous training in both theoretical and experimental physics or a more flexible curriculum in applied physics which permits the student to apply his or her knowledge of physics to another science or to technological and professional fields. Both the pure and applied physics options provide the essential content of undergraduate physics and successful completion of either program will provide good preparation for graduate work in physics or in one of the fields in which the student may wish to apply his or her physics knowledge.

A supplementary area in optics may be elected by students under either the pure or applied physics option. The optics sequence is especially relevant to individuals who wish to prepare for careers in such rapidly expanding fields as optical component and system design, lasers, and image processing or who anticipate graduate studies in astronomy, engineering, optics, or physics.

The pure physics option provides the student with a competitive advantage in areas of physics which deal with both theoretical and experimental concepts and hence may prove more immediately valuable to the student who, following graduation, desires to initiate graduate work in physics or to pursue a career in which a broad theoretical and experimental background in physics is required.

The applied physics option consists of a required physics sequence and a supplementary program from the following areas: biology, business administration, chemistry, engineering, environmental science, optics, radiological health physics, or technology. The applied physics option provides the student who has a clear understanding of career objectives with an early opportunity to integrate personal goals with the study of physics and undoubtedly will have immediate relevancy for the student who desires to pursue a career in research and development or who wishes to initiate graduate studies in any of the applied physics disciplines following the completion of undergraduate studies.

Both the pure and applied physics curricula involve a common freshman year, at the end of which the student normally is expected to consult his or her faculty advisor and to make a choice of program. The physics major is offered under the requirements of the College of Pure and Applied Sciences for the Bachelor of Science degree. A grade-point average of 2.00 or better is required in physics (courses with prefixes of "80", "95", and "96") for graduation.

Summary of Degree Requirements

I University Core Requirements	23
Physical Education	2
English Composition	6
Area I (Behavioral & Social Sciences)	6-9*
Area II (Fine Arts & Humanities)	6-9*
Area III (Mathematics & Sciences)	(12)+

*A minimum of two courses and six credits must be presented in each of the three areas of the University Core Requirements. An additional three courses and nine credits must be presented from among the three areas of the University Core Requirements. Students may not present more than three courses and nine credits from the offerings of any one department (except that not more than two courses and six credits may be presented from the offerings of the English Department) and may not present more than four courses and twelve credits in any one distribution area.

+Area III requirement is satisfied by specified science and mathematics courses of the Major Field Requirements for Supporting Sciences & Mathematics.

#Six credits in a single foreign language (French, German, or Russian) are required of students electing the pure physics option.

II	Option in Pure Physics#	102
A	Major Field Requirements	84
1.	Physics	
95-141:	Physics I or	3
95-147:	Honors Physics I	(4)
96-147:	Fundamentals of Experimental Physics I (Honors)	1
95-144:	Physics II or	3
95-148:	Honors Physics II	(4)
96-148:	Fundamentals of Experimental Physics II (Honors)	1
95-209:	Electricity and Magnetism	4
95-210:	Introductory Modern Physics	4
95-238:	Optics and Waves	2
96-257:	Physical Instrumentation	2
96-293:	Experimental Physics I	3
96-294:	Experimental Physics II	3
95-308:	Mathematical Techniques of Physics	4
95-313:	Mechanics	4
95-335:	Introductory Quantum Mechanics I	3
95-336:	Introductory Quantum Mechanics II	3
95-353:	Electromagnetism I	3
95-354:	Electromagnetism II	3
96-393:	Intermediate Physics Laboratory I	2
96-394:	Intermediate Physics Laboratory II	2
95-421:	Statistical Thermodynamics	4
95-461:	Topics in Nuclear Physics	3
95-472:	Topics in Solid State Physics	3
2.	Chemistry	8
84-121:	Chemistry	3
84-123:	Chemistry Laboratory	1
84-122:	Chemistry	3
84-124:	Chemistry Laboratory or	1
84-135:	Honors Chemistry	(3)
84-137:	Honors Chemistry Laboratory	(1)
84-136:	Honors Chemistry	(3)
84-138:	Honors Chemistry Laboratory	(1)
3.	Mathematics	16
92-131:	Calculus B-I or	4
92-133:	Calculus A-I	(4)
92-132:	Calculus B-II	4
92-134:	Calculus A-II	(4)
92-207:	Mathematical Techniques of Physics I	4
92-208:	Mathematical Techniques of Physics II	4
B	Elective Courses	18

Upon the approval of faculty advisors, students may elect courses from among the offerings of the University which are suitable to their needs and interests. At least 3 credits must be elected from course offerings in behavioral & social sciences, fine arts, and humanities. These credits are in excess of those which are presented for Area I and II of the University Core Requirements.

III Option in Applied Physics#	102
A Major Field Requirements	72
1. Applied Physics	48
95-141: Physics I or	3
95-147: Honors Physics I	(4)
96-147: Fundamentals of Experimental Physics I (Honors)	1
95-144: Physics II or	3
95-148: Honors Physics II	(4)
96-148: Fundamentals of Experimental Physics II (Honors)	1
95-245: Physics III	3
95-246: Special Topics in Physics	4
96-257: Physical Instrumentation	2
96-293: Experimental Physics I	3
96-294: Experimental Physics II	3
96-393: Intermediate Physics Laboratory I	2
96-394: Intermediate Physics Laboratory II	2
95-421: Statistical Thermodynamics	4
80-311: Applied Mechanics	4
80-335: Applied Modern Physics I	3
80-336: Applied Modern Physics II	3
80-354: Applied Electromagnetism	4
80-397: Computer Programming & Applications I	3
2. Chemistry	8
84-121: Chemistry	3
84-123: Chemistry Laboratory	1
84-122: Chemistry	3
84-124: Chemistry Laboratory or	1
84-135: Honors Chemistry	(3)
84-137: Honors Chemistry Laboratory	(1)
84-136: Honors Chemistry	(3)
84-138: Honors Chemistry Laboratory	(1)
3. Mathematics	16
92-131: Calculus B-I or	4
92-133: Calculus A-I	(4)
92-132: Calculus B-II	4
92-134: Calculus A-II	(4)
92-207: Mathematical Techniques of Physics I	4
92-208: Mathematical Techniques of Physics II	4
B Supplementary Area	18
Students pursuing the applied physics option are required to complete 18 credits in one of the following fields: biology, business administration, chemistry, engineering, environmental science, optics, radiological health physics, or technology. Students who elect a supplementary area in optics complete 80-337, 96-337 (substitutes for 96-393), 80-338, 96-338 (substitutes for 96-394), 80-439, 96-439, 80-440, and 96-440.	
C Elective Courses	12
Upon the approval of their faculty advisors, students may elect courses from among the offerings of the University which are suitable to their needs and interests. At least one elective must be in a science area (other than physics) or in mathematics. At least one elective must be selected from the course offerings in behavioral & social sciences, fine arts, and humanities.	

IV Minimum Credit Requirement 125

#Prerequisites for courses of the Major Field Requirements, or courses which are prerequisites for admission to the College of Pure and Applied Sciences, may not be credited to requirements for degrees in the College of Pure and Applied Sciences. All Bachelor of Science programs require, as a minimum, 74 credits and 20 courses from the offerings of the College of Pure and Applied Sciences.

Radiological Health Physics Major

The radiological health physics program is designed to provide needed professional personnel to assist in the advancement of the safe utilization of nuclear energy and radiation. The academic program, which is broadly based in the sciences and includes specialized training and internship programs, stresses the complex interrelationships of scientific knowledges and technological skills which are fundamental to the solution of problems of radiation safety and control. Summer programs, which are established in cooperation with nuclear and radiation facilities of the University of Lowell, government, laboratories, industries, and major hospitals, provide experience with equipment methods which are characteristic of current techniques and philosophies of professional practice in the radiation protection field and assist students in selecting professional positions after graduation or in determining areas of interest for advanced graduate work or research.

Summary of Degree Requirements

I	University Core Requirements	23
	Physical Education	2
	English Composition	6
	Area I (Behavioral & Social Sciences)	6-9*
	Area II (Fine Arts & Humanities)	6-9*
	Area III (Mathematics & Sciences)	(12)+

*A minimum of two courses and six credits must be presented in each of the three areas of the University Core Requirements. An additional three courses and nine credits must be presented from among the three areas of the University Core Requirements. Students may not present more than three courses and nine credits from the offerings of any one department (except that not more than two courses and six credits may be presented from the offerings of the English Department) and may not present more than four courses and twelve credits in any one distribution area.

+ Area III requirement is satisfied by specified science and mathematics courses of the Major Field Requirements for Supporting Sciences & Mathematics.

II	Major Field Requirements#	85-87
A	Radiological Health Physics	50
	16-211: Fundamentals of Electricity	3
	95-141: Physics I	3
	96-141: Fundamentals of Experimental Physics I	1
	95-144: Physics II	3
	96-144: Fundamentals of Experimental Physics II	1
	95-245: Physics III	3
	96-245: Fundamentals of Experimental Physics III	1
	95-246: Special Topics in Physics	4
	96-246: Fundamentals of Experimental Physics IV	1
	98-101: Introduction to Radiological Sciences I	1
	98-102: Introduction to Radiological Sciences II	1
	98-401: Radiation Safety and Control I	3
	98-403: Numerical Laboratory in Radiation Safety	1
	98-402: Radiation Safety and Control II	4
	98-422: Environmental Radiation & Nuclear Site Criteria	3

98-472:	Radiation Biology	
80-201:	Physics of Radiation	
80-202:	Physics of Nuclei	
80-206:	Nuclear Instrumentation I	
80-305:	Nuclear Instrumentation II	
B	Supporting Sciences and Mathematics	35-3
84-121:	Chemistry	
84-123:	Chemistry Laboratory	
84-122:	Chemistry	
84-124:	Chemistry Laboratory	
84-484:	Radiochemistry	
81-111:	Principles of Biology I	
81-112:	Principles of Biology II	
81-252:	Mammalian Physiology	
81-254:	Mammalian Physiology Laboratory	
92-133:	Calculus A-I or	(4
92-131:	Calculus B-I	
92-134:	Calculus A-II or	(4
92-132:	Calculus B-II	
92-233:	Calculus A-III or	(4
92-231:	Calculus B-III	
92-234:	Differential Equations	
III	Allied Courses and Electives#	2
42-112:	Technical & Scientific Communication	
	Electives	1
IV	Minimum Credit Requirement	12
#Prerequisites for courses of the Major Field Requirements, or courses which are prerequisites for admission to the College of Pure and Applied Sciences, may not be credited to requirements for degrees in the College of Pure and Applied Sciences. All Bachelor of Science programs require, as a minimum, 74 credits and 20 courses from the offerings of the College of Pure and Applied Sciences		

Physics Minor

A minor in physics consists of 24 credits and must include either Sequence I or II as specified below plus additional courses from Sequence III and a minimum of 12 credits from course offerings in physics at the 300-400 level.

Sequence I:

95-141, 96-141, 95-144, 96-144, 95-245, and 96-245

Sequence II:

95-147, 96-147, 95-148, 96-148, 95-247, and 96-245

Sequence III:

95-246 or 248, 95-238, 96-257, 96-293, 96-294, 80-201, 80-202, 80-206

SAMPLE COURSE OF STUDY FOR PHYSICS — PURE PHYSICS OPTION
 Bachelor of Science Degree)

Freshman Year

Fall Semester		Spring Semester	
42-101 College Writing	3	42-102 College Writing and Literature	3
* 84-121 Chemistry	3	* 84-122 Chemistry	3
* 84-123 Chemistry Laboratory	1	* 84-124 Chemistry Laboratory	1
* 92-133 Calculus A-I	4	* 92-134 Calculus A-II	4
+ 95-141 Physics I	3	+ 95-144 Physics II	3
96-147 Fundamentals of Experimental Physics I (Honors)	1	96-148 Fundamentals of Experimental Physics II (Honors)	1
39 Physical Education	1	39 Physical Education	1
	16		16

Sophomore Year

Fall Semester		Spring Semester	
92-207 Mathematical Techniques of Physics I	4	92-208 Mathematical Techniques of Physics II	4
95-209 Electricity and Magnetism	4	95-210 Introductory Modern Physics	4
96-293 Experimental Physics I	3	95-238 Optics and Waves	2
96-257 Physical Instrumentation	2	96-294 Experimental Physics II	3
Elective	3	Elective	3
	16		16

Junior Year

Fall Semester		Spring Semester	
95-313 Mechanics	4	95-308 Mathematical Techniques of Physics III	4
95-335 Introductory Quantum Mechanics I	3	95-336 Introductory Quantum Mechanics II	3
95-353 Electromagnetism I	3	95-354 Electromagnetism II	3
96-393 Intermediate Physics Laboratory I	2	96-394 Intermediate Physics Laboratory II	2
Elective	3	Elective	3
	15		15

Senior Year

Fall Semester		Spring Semester	
95-421 Statistical Thermodynamics	4	95-472 Topics in Solid State Physics	3
95-461 Topics in Nuclear Physics	3	Electives	12
Electives	9		
	16		15

Cf. Summary of Degree Requirements for listings of approved alternative courses.
 -Appropriate honors courses may be substituted.

SAMPLE COURSE OF STUDY FOR RADIOLOGICAL HEALTH PHYSICS
(Bachelor of Science Degree)

Freshman Year

Fall Semester

42-101	College Writing	3
84-121	Chemistry	3
84-123	Chemistry Laboratory	1
* 92-133	Calculus A-I	4
95-141	Physics I	4
96-141	Fundamentals of Experimental Physics I	1
98-101	Introduction to Radiological Sciences I	1
39	Physical Education	1
		<hr/>

17

Spring Semester

42-102	College Writing & Literature	3
84-122	Chemistry	3
84-124	Chemistry Laboratory	1
92-134	Calculus A-II	4
95-144	Physics II	3
96-144	Fundamentals of Experimental Physics II	1
98-102	Introduction to Radiological Sciences II	1
39	Physical Education	1
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17

Sophomore Year

Fall Semester

80-201	Physics of Radiation	3
81-111	Principles of Biology I	3
16-211	Fundamentals of Electricity	3
* 92-233	Calculus A-III	3
95-245	Physics III	3
96-245	Fundamentals of Experimental Physics III	1
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Spring Semester

80-202	Physics of Nuclei	3
81-112	Principles of Biology II	3
80-206	Nuclear Instrumentation I	4
* 92-234	Differential Equations	3
95-246	Special Topics in Physics	4
96-246	Fundamentals of Experimental Physics IV	1
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Junior Year

Fall Semester

98-401	Radiation Safety & Control	3
98-403	Numerical Laboratory in Radiation Safety & Control	1
80-305	Nuclear Instrumentation II	4
42-112	Technical & Scientific Communication	3
	Elective	3
		<hr/>

14

Spring Semester

81-252	Mammalian Physiology	3
81-254	Mammalian Physiology Laboratory	1
98-402	Radiation Safety & Control II	4
	Elective (Area I)	3
	Elective (Area II)	3
	Elective	3
		<hr/>

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Senior Year

Fall Semester

Elective (Area I)	3
Elective (Area II)	3
Elective (Area I or II)	3
Electives	6

15

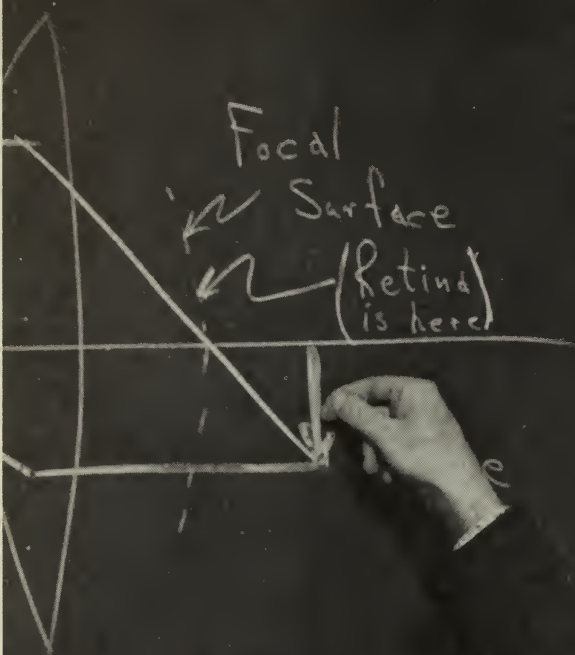
Spring Semester

98-472	Radiation Biology	3
84-484	Radiochemistry	3
98-422	Environmental Radiation	3
	Electives	6
		<hr/>

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*Cf. Summary of Degree Requirements for listings of approved alternative courses.

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FACULTY OF THE COLLEGE OF PURE AND APPLIED SCIENCES

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John Bruce, B.S., M.S., Ph.D. (Leave 1978-1980)

Joseph Salamone, B.S., Ph.D. (Acting)

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Alan Doerr, B.A., M.A.; Mathematics

Gunter Kegel, B.Ph., Ph.D.; Physics and Applied Physics

Albert Kowalak, B.S., M.S., Ph.D.; Chemistry

Arnold O'Brien, A.B., M.S., Ph.D.; Earth Sciences

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- Alexander Sachs, Assistant Professor, Physics; B.S., Northwestern University.
- Joseph C. Salamone, Professor, Chemistry; B.S., Hofstra University; Ph.D., Polytechnic Institute of Brooklyn.
- Samuel P. Sawan, Assistant Professor, Chemistry; B.S., Ph.D., University of Akron.
- Allen Scattergood, Professor, Chemistry; A.B., Columbia University; Ph.D., Princeton University.
- Walter A. Schier, Professor, Physics; B.S., St. Procopius College; Ph.D., University of Notre Dame.
- Garfield C. Schmidt, Associate Professor, Mathematics; B.S., M.S., Kansas State University; Ph.D., University of New Hampshire.
- Kunnat J. Sebastian, Associate Professor, Physics; B.S., Saint Berchmans College (India); M.S., University College (India); Ph.D., University of Maryland.
- Bernard Shapiro, Professor, Mathematics; B.S., Lowell Technological Institute; S.M., Massachusetts Institute of Technology.
- Eric Sheldon, Professor, Physics; B.Sc., B.Sc., Ph.D., D.Sc., University of London.
- Prentiss Shepherd, Jr., Assistant Professor, Biological Sciences; A.B., A.M., Harvard University.
- Ilze Skare, Associate Professor, Biological Sciences; B.A., University of Connecticut; Ph.D., Duke University.
- Kenneth W. Skrable, Professor, Physics; B.S., Moravian College; M.S., Vanderbilt University; Ph.D., Rutgers University.
- Barbara L. Smith, Assistant Professor, Chemistry; B.S., Lowell Technological Institute.
- Malcolm K. Smith, Professor, Physics; B.S., Haverford College; M.A., Columbia University.
- Stanley L. Spiegel, Assistant Professor, Mathematics; B.S., New York University; A.M., Ph.D., Harvard University.
- Richard W. Stimets, Assistant Professor, Physics; B.S., Ph.D., Massachusetts Institute of Technology.
- Arthur D. Talkington, Associate Professor, Mathematics; B.S., University of Chicago; M.A., University of Missouri.
- Wen Tang, Associate Professor, Meteorology; B.S., National Central University (China); M.S., Ph.D., New York University.
- Virginia S. Taylor, Associate Professor, Mathematics; B.S., Syracuse University; M.A., Western Michigan University; Ph.D., Boston College.
- Ruth E. Tanner, Professor, Chemistry; B.S., Purdue University; Ph.D., University of Cincinnati.
- Ye-Yung Teng, Associate Professor, Physics; B.S., National Taiwan University; M.S., Ph.D., University of Maryland.
- Judith K. Tilden, Assistant Professor, Chemistry; B.A., Emmanuel College; M.S., Lowell Technological Institute.
- Jerry Waldman, Associate Professor, Physics; B.A., M.A., Columbia University; Ph.D., Massachusetts Institute of Technology.
- Arthur C. Watterson, Jr., Professor, Chemistry; B.S., Geneva College (Switzerland); Ph.D., Brown University.
- I. Jacob Weinberg, Professor, Mathematics; B.S., Yeshiva University (Israel); S.M., Ph.D., Massachusetts Institute of Technology.
- Joyce W. Williams, Assistant Professor, Mathematics; B.A., University of Minnesota; M.S., Ph.D., University of Illinois.
- Martin Wilner, Professor, Physics; B.S., Rensselaer Polytechnic Institute; M.S., Yale University; Ph.D., Massachusetts Institute of Technology.
- Richard E. Winslow, Assistant Professor, Mathematics; B.A., Columbia University; M.A., Ph.D., Brandeis University.
- Chuen Wong, Assistant Professor, Physics; Dip. Sci., Chung Chi College (Hong Kong); Ph.D., Case Institute of Technology.

Shan S. Wong, Assistant Professor, Biochemistry; B.S., Oregon State University; Ph.D., Ohio State University.

Francis T. Worrell, Professor, Physics; B.S., University of Michigan; M.S., Ph.D., University of Pittsburgh.

ADJUNCT FACULTY

Patrick Casey, Physics; B.S., Lowell Technological Institute; M.S., University of Lowell.

Christopher Duggan, Mathematics; B.S., M.S., University of Lowell.

Jane Grossman, Mathematics; B.S., M.S., Lowell Technological Institute

Mary Hall, Mathematics; A.B., Regis College; M.Ed., Boston University.

Madhoo Kanal, Physics; B.S.C., University of Agra (India); B.S.E., M.S., Ph.D., University of Michigan.

Lee-Jun Wong, Chemistry; B.S., National Taiwan University; Ph.D., Ohio State University.

Hai-Tung Li, Mathematics; B.A., Bowdoin College; M.A., Dartmouth College; Ph.D., Brandeis University.

Alfred P. Olson, Chemistry; B.S., Lowell Technological Institute; Ph.D., University of Lowell.

James Sears, Mathematics; B.S., M.S., Lowell Technological Institute.

Won H. Sohn, Chemistry; B.S., Kyungpook National University (Korea); M.Ch.E., Youngnam University (Korea); M.S., University of Georgia, Ph.D., University of Missouri.

Charles Steele, Jr., Mathematics; A.B., M.A., Boston College; M.S.E.E., Northeastern University; M.A.Sc., Boston University.

VISITING LECTURERS

Rana L. Archambault, Biology; B.S., M.Sc., Fairleigh Dickinson University.

Marcia A. Burns, Mathematics; B.A., Merrimack College; M.S., Boston College.

Richard DiNitto, Earth Science; B.S., Boston State College.

Paul T. Fawcett, Biology; B.S., University of Lowell.

Brenda Hayden, Biology; B.A., Lowell State College.

Raymond Hebert, Mathematics; B.S., Fitchburg State College; M.A., Seton Hall University.

John F. Kick, Earth Science; B.A., University of Colorado; M.A., University of Toronto; Ph.D., University of Massachusetts.

Meftah Mahmud, Chemistry; B.S.C., M.S.C., Dacca University (India); Ph.D., University of Liverpool (England).

Marcel Schneeberger, Mathematics; B.S., Freies Gymnasium (Berne, Switzerland); M.S., Ph.D., University of Berne (Switzerland).

Donald Vareika, Earth Science; B.S., Syracuse University; M.S., University of Michigan.

Irwin Wenger, Mathematics; B.A., Yeshiva University; M.A., Columbia University.

Ralph White, Mathematics; B.S., Trinity College; E.M., Boston University.



COLLEGE OF EDUCATION

Margaret R. Shannon, Dean

The preparation of graduates for professional careers in education has been a responsibility of the University of Lowell and its predecessor institution, Lowell State College, since 1894. Graduates of Lowell programs have rendered service as teachers, specialists, and administrators in the schools, colleges and universities, and public and private enterprises of the Commonwealth and the nation. The College of Education continues an historic commitment to education through its undergraduate and graduate degree programs and is committed to maintaining and continuously improving quality programs in education which will produce the high calibre personnel which the schools of the future will require. For information concerning graduate degree programs in education, see the *Graduate School Catalogue*.

OBJECTIVE OF THE COLLEGE OF EDUCATION

Through education programs which prepare intellectually able and professionally competent teachers and other educational and administrative personnel for leadership roles in school and non-school settings, the Faculty of the College of Education seek to improve instruction for elementary and secondary students in both public and independent schools in the Commonwealth and the nation.

COLLEGE ORGANIZATION AND GOVERNANCE

The College of Education is organized into two departments and is administered by a dean who is assisted by a college council. The two departments are responsible for developing course offerings and programs of studies, subject to the approval of the college curriculum committee and the college council. Although the Faculty of the College has overall responsibility for all academic policies of the College, the Academic Standards and Admissions Committee is responsible for developing and enforcing the academic standards of the Faculty, for making decisions on all candidates applying for admission to the College of Education, and for reviewing the appeals of students who failed to meet the requirements for admission to or retention in degree programs.

College Council

Norman F. Benson, Social Science Education
M. Virginia Biggy, Curriculum and Instruction
Richard G. Lyons, Educational Philosophy
Dorothy V. Meyer, Educational Administration
William T. Phelan, Educational Sociology
Margaret R. Shannon, Dean

Academic Standards and Admissions Committee

M. Virginia Biggy, Curriculum and Instruction
Ado Commito, Curriculum and Instruction
William F. Coughlin, English Education
Michael T. D'Elia, Measurement and Research
Edward R. Lilly, Educational Administration
Anne McParland, Reading Education

Curriculum Committee

M. Virginia Biggy, Curriculum and Instruction
John J. Catallozzi, Educational Psychology
Penelope Z. Demogenes, Mathematics Education
Alice G. Kiernan, Language and Literature Education
Richard G. Lyons, Educational Philosophy
Undergraduate student to be elected
Graduate student to be elected

BACCALAUREATE DEGREE PROGRAMS

The College of Education offers both elementary and secondary education programs leading to the degree of Bachelor of Arts. Course requirements for elementary and secondary education curricula have been determined by specific professional objectives and are subject to the recommendations of professional associations and learned societies concerned with the quality and character of teacher preparation. Baccalaureate degree programs of the College of Education are fully accredited by the National Council for the Accreditation of Teacher Education.

All elementary and secondary education curricula incorporate components concerned with basic general education, content for teaching specialties, humanistic and behavioral science foundations of educational practice, teaching and learning theory, and apprentice teaching.

Candidates for degrees in the College of Education continue their studies for academic majors in the college from which they transferred at the time of their admission but are subject to degree requirements as specified by the College of Education only. In order to qualify for the Bachelor of Arts degree in the College of Education, each student must comply with the University Core Requirements, must conform to the rules of the College of Education which govern degrees and major studies for such degrees, must complete all degree requirements with an average of not less than 2.50, and must achieve averages of 2.50 or better in each of their academic and professional majors.

GENERAL COLLEGE REQUIREMENTS

Admission to baccalaureate study at the University of Lowell does not guarantee admission to the College of Education. All applicants to the College must have been officially admitted to the University as matriculated students enrolled in a degree program in the College of Liberal Arts. Professional courses in curriculum and instruction are available only to students who have been admitted to a degree program in the College of Education.

Application for Admission

1. The semester deadlines for filing an application for admission and intercollegiate transfer to the College of Education are April 1 and November 1. Application forms are available in the Education Office, Coburn Hall, Room 105.
2. Students should file an application for admission during the semester in which they will complete their sophomore year — that is, the semester in which they will have earned 60 semester credits.

3. Students who transfer to the University with 45 or more semester credits may file an application for admission on the appropriate date in their first semester of full-time study in the University providing that they will have earned 60 credits at the end of the semester in which they file an admissions application.
4. The last semester during which an application for admission may be filed is the fifth semester of full-time study or the semester in which 75 credits will have been earned. Any exception to this restriction requires the endorsement of the Dean of the College of Education.
5. An individual who is admitted to the University as a transfer student from an institution in which he or she was enrolled in a teacher education program must comply with the requirements for admission to the College of Education as a matriculating student. *Credit for courses in student teaching (apprentice teaching) and in curriculum and instruction (methods courses) may not be transferred to the College of Education. Credit for courses in educational foundations, if equivalent, may be transferred from a baccalaureate degree-granting institution.*

Requirements for Admission

Admission to the College of Education is selective and *differential admissions criteria above and beyond the minimum requirements will be applied when limited resources render it necessary to establish limitations upon enrollments.*

The regular requirements which students must meet are as follows:

1. Completion of no less than 60 semester credits of required course work (exclusive of Physical Activities courses), by the end of the sophomore year with a cumulative grade-point average of 2.50 or better for all course work taken in the University of Lowell. Students who transfer to the University must have a cumulative grade-point average of 2.50 or better for all course work transferred and must also have a cumulative grade-point average of 2.50 or better for all courses taken in the University.
2. Completion of no less than 18 semester credits in courses which have been elected from the required course listing for the student's academic major with a cumulative grade-point average of 2.50 or better for courses transferred and a grade-point average of 2.50 or better for courses taken in the University.
3. Satisfactory evidency of effective communication skills in English, with a grade of "C" or better in 42-101: College Writing and 42-102: College Writing and Literature respectively.
4. Completion of the University Core Requirements as specified by the College of Education, including prerequisite courses such as child psychology or adolescent psychology.

Requirements for Retention

Students who are admitted to the College of Education are evaluated at the end of each semester. The requirements which students must satisfy for continued enrollment in the College of Education are as follows:

1. A cumulative grade point average of 2.50 or better must be earned in all courses which are taken in the University.
2. A cumulative grade-point average of 2.50 or better must be earned in all required and elective courses which are taken in the University and which may be applied to requirements of the student's academic major.
3. A cumulative grade-point average of 2.50 or better must be earned in all courses in education which are taken in the University, with a grade of "C" or better in each course.
4. Professional courses in educational foundations, curriculum and instruction, and apprentice teaching in which grades of "CD", "D", "F", or "U" have been earned may not be deleted from the student's cumulative average during his or her period of enrollment in the College of Education and may not be repeated for credit.

5. Students who do not satisfy these retention requirements may not continue as degree candidates in the College of Education and their enrollment in the College accordingly is terminated.
6. Students whose enrollment as a degree candidate in the College of Education has been terminated may not enroll for credit or for audit in any course offered by the Department of Curriculum & Instruction.

Appeals Procedures

Applicants who do not qualify for admission to the College of Education and students who have been notified in writing that their enrollments as degree candidates in the College of Education have been terminated may submit written petitions to the Academic Standards and Admissions Committee for a review of their records and for permission to reapply on the filing date in the semester which immediately follows the semester in which they have applied for admission or in which their enrollments were terminated. Students may not petition the Committee more than once for permission to reapply. All decisions of the Committee in evaluating such petitions are final.

Grading Policies

With the exception of courses in apprentice teaching and the Practicum in Education, all courses offered by the College of Education are graded in accordance with the qualitative letter grades employed by the University to characterize the quality of a student's performance in a course.

Courses offered by the College in which grades of "CD", "D", "F", or "U" have been earned may not be deleted from the student's cumulative average during his or her period of enrollment in the College of Education and may not be repeated for credit.

All courses in apprentice teaching are graded on the "S" or "U" basis. A grade of "S" (satisfactory) in an apprentice teaching course indicates that a student's performance in teaching merits an evaluation of "C" or better. Supportive evidence of each student's performance in teaching is provided in his or her placement file and is made available to prospective employers. Course credit granted to students for courses in which a grade of "S" has been assigned are not computed in cumulative averages.

Students who earn a grade of "U" (unsatisfactory) in a course in apprentice teaching are automatically terminated as a degree candidate in the College of Education. A grade of "U" entered on the student's permanent record card indicates that attempted course credits have not been granted. This grade does not prejudice the student's academic standing in the University since such credits are not counted toward the grade-point average.

Application for and Requirements for Apprentice Teaching

All students enrolled in a degree program in the College of Education must file an application for admission to Apprentice Teaching. The application forms can be obtained in the Office of the Director of Field Services in Room 111, Coburn Hall.

Completed applications must be filed by May 1, for students who wish to be admitted to the Apprentice Teaching course in the fall semester of their senior year, and by December 1, for students who wish to be admitted to the Apprentice Teaching course in the spring semester of their senior year.

Decisions on the placement of students in the public schools for Apprentice Teaching, and the professional contacts and arrangements pertaining thereto, are made by the Director of Field Services only.

The requirements for admission to Apprentice Teaching include the following:

1. Completion of no less than 90 semester credits of the degree program with a grade-point average of no less than 2.50 and with no record of incompleted courses;
2. Completion of no less than 27 credits of required courses in the academic major with a grade-point average of no less than 2.50;
3. Completion of all required courses in education with a grade-point average of no less than 2.50 and with no grade less than "C".
4. Completion of the required physical activities courses;
5. Compliance with a legal requirement of the Commonwealth of Massachusetts by submitting up-to-date evidence of freedom from tuberculosis by means of clinical testing or chest x-ray to the Director of Field Services no later than September 30th of the senior year; and
6. Evidence of sound emotional and physical health which will enable the student to provide safe, competent practice in teaching. In special cases, the Academic Standards and Admissions Committee may require the student to submit statements of physical and/or mental health from licensed physicians or psychiatrists. Following a review of such statements, the Committee may recommend that the student be denied admission to apprentice teaching and/or that his or her enrollment as a degree candidate in the College of Education be terminated.

Semester Course Load

Students enrolled in degree programs of the College of Education are required to register as full-time students each semester and to carry a typical course load of 15 credits. The College does not permit students to register for less than full-time study, and all students are required, therefore, to register for and to complete a minimum of 12 credits each semester.

Course Withdrawal

All courses offered by the College of Education which operate on the semester basis are subject to the withdrawal policies of the University as stated elsewhere in this publication under the heading "Academic Policies." Students may withdraw with notations of "W" from curriculum and instruction courses, which

operate on an 8 week basis. Procedures for withdrawal from such courses are the same as those for regular courses except that the official "course drop cards" must be filed with the Office of the Registrar no later than the 14th class day of the course.

A student who is enrolled in an Apprentice Teaching course is permitted to withdraw only for documented medical or personal emergency reasons, or for personal unsuitability for teaching. A student whose performance in teaching has been satisfactory prior to withdrawing for medical or personal emergency reasons is permitted to withdraw with the notation of "W". All other withdrawals from Apprentice Teaching are recorded on the student's permanent record card with a grade of "U".

A student may be withdrawn from apprentice teaching at any time with a grade of "U" when his/her performance in teaching is unsatisfactory; when he/she has shown a record of irresponsibility in carrying out his/her apprentice teaching commitments; when he/she has been absent from teaching for more than two days without a satisfactory documented reason; or when he/she engages in activities, including employment, which interfere with the performance of assigned responsibilities and which violate the terms of his/her apprentice teaching contract.

A student who withdraws or is withdrawn from a course in Apprentice Teaching with a grade of "U" is automatically terminated as a degree candidate in the College of Education.

Withdrawal from the College of Education

Students who wish to withdraw from a degree program in the College of Education are required to notify the Office of the Dean of the College of Education prior to initiating procedures for making an intercollegiate transfer within the University.

Application for Professional Certification

Upon completion of a baccalaureate degree program in the College of Education, senior students may file an application for professional certification to teach in Massachusetts. When the application materials are complete, the College will recommend the student for a teaching certificate and the appropriate endorsement will be entered on his permanent record card. The Massachusetts Department of Teacher Certification has the sole legal responsibility for granting certification.

DEPARTMENT OF CURRICULUM & INSTRUCTION

M. Virginia Biggy, Chairperson
Professors: M. Virginia Biggy, Margaret R. Shannon
Associate Professors: Penelope Demongenes, Alice Kiernan, Anne McParland
Assistant Professors: Norman Benson, William Coughlin, Edward Lilly, Dorothy Meyer
Adjunct Faculty Members: Ado Commito

The Department of Curriculum and Instruction offers professional majors in both elementary and secondary education.

Elementary Education

The degree programs in elementary education are designed to prepare students for professional certification as teachers for the elementary schools, K-8. Unlike most elementary education programs, these programs require students to complete an academic major in one of the following areas: American studies, art, English, French, history, psychology, sociology, or Spanish. The requirements for the elementary education major are set by the Department of Curriculum and Instruction. The requirements for each of the academic majors are set by the concerned academic department in collaboration with the Department of Curriculum and Instruction. These requirements reflect those guidelines of national learned societies for academic programs which are mandated by the National Council for the Accreditation of Teacher Education. At least 15 credits of all majors must be taken at the upper-division level. Listed below are summaries of degree requirements for the several elementary education programs.

Elementary Education and American Studies

I	University Core Requirements	35-37 s.h.
	Physical Education	2
	College Writing I and II	6
	Area I (Behavioral and Social Sciences)	9
	47-261: Child Psychology required	
	Two electives required	
	Area II (Fine Arts and Humanities)	9
	One elective in literature required	
	Two electives required	
	Area III (Mathematics and Science)	9-11
	92-113: College Algebra required	
	Two electives in science required	
II	American Studies Requirements	30
	43-305: American Intellectual History I and	3
	43-306: American Intellectual History II OR	3
	43-313: American Social History I and	
	43-314: American Social History II	
	Elective	3
	Elective	3
	Discipline #1 elective "200+"	3
	Discipline #1 elective "200+"	3
	Discipline #2 elective "200+"	3
	Discipline #2 elective "300+"	3
	Interdisciplinary elective "300+"	3
	40-401: American Studies Seminar	3

III	Elementary Education Requirements	35
	01-361: Measurement and Evaluation	3
	01-381/382/383: Sociology of Education <i>OR</i> Social Organization of Schools <i>OR</i> Education and Social Inequality	3
	01-392: Philosophical and Moral Issues in Education	3
	02-361: Reading: Elementary	3
	02-362: Language and Literature	3
	02-363: Mathematics: Elementary	3
	02-364: Analysis of Teaching	3
	02-365: Humanities-Social Studies	2
	02-366: Science	2
	02-369: Seminar in Elementary Education	2
	02-461: Apprentice Teaching	8
IV	Unrestricted Elective Courses	24
V	Minimum Credits for the Degree	124-126

Elementary Education and Art

I	University Core Requirements	35-37 s.h.
	Physical Education	2
	College Writing I and II	6
	Area I (Behavioral and Social Sciences)	9
	47-261: Child Psychology required	
	One elective in American History required	
	One elective required	
	Area II (Fine Arts and Humanities)	9
	One elective in literature required	
	Two electives required	
	Area III (Mathematics and Sciences)	9-11
	92-113: College Algebra required	
	Two electives in science required	
II	Art Requirements	36
	58-101: Appreciation of the Visual Arts	3
	58-202: Survey of Art	3
	58-3 : Art History elective "300"	3
	58-3 : Art History elective "300"	3
	57-251: Visual Design I	3
	57-255: Drawing I	3
	57-261: Photography I	3
	57-267: Graphics Studio	3
	57-271: Painting I Studio	3
	57-3 : Studio Art elective "300"	3
	57-3 : Studio Art elective "300"	3
	57-3 : Studio Art elective "300"	3
III	Elementary Education Requirements	35
	01-361: Measurement and Evaluation	3
	01-381/382/383: Sociology of Education <i>OR</i> Social Organization of Schools <i>OR</i> Education and Social Inequality	3
	01-392: Philosophical and Moral Issues in Education	3
	02-361: Reading: Elementary	3
	02-362: Language and Literature	3
	02-363: Mathematics: Elementary	3
	02-364: Analysis of Teaching	3
	02-365: Humanities-Social Studies	2

02-366: Science	2
02-369: Seminar in Elementary Education	2
02-461: Apprentice Teaching	8
IV Unrestricted Elective Courses	18
V Minimum Credits for the Degree	124-126

Elementary Education and English

I University Core Requirements	35-37 s.h.
Physical Education	2
College Writing I and II	6
Area I (Behavioral and Social Sciences)	9
47-261: Child Psychology required.	
One elective in American History required.	
One other elective required.	
Area II (Fine Arts and Humanities)	9
Two electives in Intermediate Foreign Language required.	
One other elective required, (non-English).	
Area III (Mathematics and Science)	9-11
92-113: College Algebra required.	
Two electives in science required.	
II English Requirements	36
42-201: Great Books of Antiquity	3
42-289: Analysis of Modern English	3
42-291: History of English Literature I	3
42-292: History of English Literature II	3
42-293: History of American Literature I	3
42-294: History of American Literature II	3
42-297: Methods of Literary Study	3
42-3 : Elective "300+", Category I, II, or III	3
42-3 : Elective "300+", Category I, II, or III	3
42-3 : Elective "300+"	3
42-3 : Elective in American Lit., (post 1820) "300+"	3
42-423/424: Shakespeare I or II	3
III Elementary Education Requirements	35
01-361: Measurement and Evaluation	3
01-381/382/383: Sociology of Education <i>OR</i> Social Organization of Schools <i>OR</i> Education and Social Inequality	3
01-392: Philosophical and Moral Issues in Education	3
02-361: Reading: Elementary	3
02-362: Language and Literature	3
02-363: Mathematics: Elementary	3
02-364: Analysis of Teaching	3
02-365: Humanities-Social Studies	2
02-366: Science	2
02-369: Seminar in Elementary Education	2
02-461: Apprentice Teaching	8
IV Unrestricted Elective Courses	18
V Minimum Credits for the Degree	124-126

Elementary Education and French

I	University Core Requirements	35-37 s.h.
	Physical Education	2
	College Writing I and II	6
	Area I (Behavioral and Social Sciences)	9
	47-261: Child Psychology required.	
	One elective in American History required.	
	One other elective required.	
	Area II (Fine Arts and Humanities)	9
	One elective in literature required (non-French).	
	Two other electives required (non-French).	
	Area III (Mathematics and Science)	9-11
	92-113: College Algebra required.	
	Two electives in science required.	
II	French Requirements	33
	50-231: French Oral Expression I	3
	50-232: French Oral Expression II	3
	50-242: French Phonetics and Diction	1
	50-244: Advanced French Grammar	3
	50-246: Advanced French Conversation	3
	50-249: French Through Light and Sound	2
	50-348: Advanced French Composition	3
	50-301: Middle Ages, Renaissance, and Classicism	3
	50-302: Enlightenment and Romanticism	3
	50-303: Realism to the Present	3
	50-4 : Literature elective "400"	3
	50-4 : Literature elective "400"	3
III	Elementary Education Requirements	35
	01-361: Measurement and Evaluation	3
	01-381/382/383: Sociology of Education <i>OR</i> Social Organization of Schools <i>OR</i> Education and Social Inequality	3
	01-392: Philosophical and Moral Issues in Education	3
	02-361: Reading: Elementary	3
	02-362: Language and Literature	3
	02-363: Mathematics: Elementary	3
	02-364: Analysis of Teaching	3
	02-365: Humanities-Social Studies	2
	02-366: Science	2
	02-369: Seminar in Elementary Education	2
	02-461: Apprentice Teaching	8
IV	Unrestricted Elective Courses	21
V	Minimum Credits for the Degree	124-126

Elementary Education and History

I	University Core Requirements	35-37 s.h.
	Physical Education	2
	College Writing I and II	6
	Area I (Behavioral and Social Sciences)	9
	47-261: Child Psychology required.	
	Two other electives required (non-History).	
	Area II (Fine Arts and Humanities)	9
	One elective in literature required.	
	Two other electives required.	

Area III (Mathematics and Science)	9-11
92-113: College Algebra required.	
Two electives in science required.	
II History Requirements	36
43-105: Western Civilization to 1715	3
43-106: Western Civilization since 1715	3
43-296: Introduction to Historical Method	3
43- : American History "200+"	3
43- : American History "200+"	3
43- : European History "200+"	3
43- : European History "200+"	3
43-3 : American History "300"	3
43-3 : American History "300"	3
43-3 : Third World History "300"	3
43-3 : Elective "300"	3
43-432: Research Seminar in History	3
III Elementary Education Requirements	35
01-361: Measurement and Evaluation	3
01-381/382/383: Sociology of Education <i>OR</i> Social Organization of Schools <i>OR</i> Education and Social Inequality	3
01-392: Philosophical and Moral Issues in Education	3
02-361: Reading: Elementary	3
02-362: Language and Literature	3
02-363: Mathematics: Elementary	3
02-364: Analysis of Teaching	3
02-365: Humanities-Social Studies	2
02-366: Science	2
02-369: Seminar in Elementary Education	2
02-461: Apprentice Teaching	8
IV Unrestricted Elective Courses	18
V Minimum Credits for the Degree	124-126 s.h.

Elementary Education and Psychology

I University Core Requirements	35-37 s.h.
Physical Education	2
College Writing I and II	6
Area I (Behavioral and Social Sciences)	9
One elective in American History required.	
Two other electives required (non-Psychology).	
Area II (Fine Arts and Humanities)	9
One elective in literature required.	
Two other electives required.	
Area III (Mathematics and Science)	9-11
92-113: College Algebra required.	
Two electives in science required.	
II Psychology Requirements	33
47-111: Principles of Psychology I	3
47-112: Principles of Psychology II	3
47-209/328/335/355: Social Psychology <i>OR</i> Dynamics of Interpersonal Relations <i>OR</i> Psychology and Women <i>OR</i> Community Psychology	3
47-232/272: Psychology of Personality <i>OR</i> Abnormal Psychology	3
47-261: Child Psychology	3
47-269: Research Methods	3

47-383/384/385/386: Experimental Psychology: Learning <i>OR</i> Motivation <i>OR</i> Sensation and Perception <i>OR</i> Social	3
47-3 : Elective "300"	3
47-3 : Elective "300"	3
47-4 : Elective "400"+	3
47-4 : Elective "400"+	3
+Select from 47-473, 47-474, 47-475, 47-476, 47-477, 47-496	
III Elementary Education Requirements	35
01-361: Measurement and Evaluation	3
01-381/382/383: Sociology of Education <i>OR</i> Social Organization of Schools <i>OR</i> Education and Social Inequality	3
01-392: Philosophical and Moral Issues in Education	3
02-361: Reading: Elementary	3
02-362: Language and Literature	3
02-363: Mathematics: Elementary	3
02-364: Analysis of Teaching	3
02-365: Humanities-Social Studies	2
02-366: Science	2
02-369: Seminar in Elementary Education	2
02-461: Apprentice Teaching	8
IV Unrestricted Elective Courses	21
V Minimum Credits for Degree	124-126

Elementary Education and Sociology

I University Core Requirements	35-37 s.h.
Physical Education	2
College Writing I and II	6
Area I (Behavioral and Social Sciences)	9
47-261: Child Psychology required.	
One elective in American History required.	
One other elective required (non-Sociology).	
Area II (Fine Arts and Humanities)	9
One elective in literature required.	
Two other electives required.	
Area III (Mathematics and Science)	9-11
92-113: College Algebra required.	
Two electives in science required.	
II Sociology Requirements	30
48-101: Introduction to Sociology	3
48- : Elective	3
48- : Elective	3
48- : Elective	3
48- : Elective	3
48-321: Social Theory	3
48-3 : Elective "300"	3
48-3 : Elective "300"	3
48-402: Sociological Research	3
48-4 : Elective "400"	3

III	Elementary Education Requirements	35
	01-361: Measurement and Evaluation	3
	01-381/382/383: Sociology of Education <i>OR</i> Social Organization of Schools <i>OR</i> Education and Social Inequality	3
	01-392: Philosophical and Moral Issues in Education	3
	02-361: Reading: Elementary	3
	02-362: Language and Literature	3
	02-363: Mathematics: Elementary	3
	02-364: Analysis of Teaching	3
	02-365: Humanities-Social Studies	2
	02-366: Science	2
	02-369: Seminar in Elementary Education	2
	02-461: Apprentice Training	8
IV	Unrestricted Elective Courses	24
V	Minimum Credits for Degree	124-126

Elementary Education and Spanish

I	University Core Requirements	35-37 s.h.
	Physical Education	2
	College Writing I and II	6
	Area I (Behavioral and Social Sciences)	9
	47-261: Child Psychology required.	
	One elective in American History required.	
	One other elective required.	
	Area II (Fine Arts and Humanities)	9
	One elective in literature required (non-Spanish).	
	Two other electives required (non-Spanish).	
	Area III (Mathematics and Science)	9-11
	92-113: College Algebra required.	
	Two electives in science required.	
II	Spanish Requirements	33
	54-231: Spanish Oral Expression I	3
	54-232: Spanish Oral Expression II	3
	54-245: Advanced Spanish Conversation	3
	54-347: Advanced Spanish Composition	3
	54- : Language electives*	6
	54- : Literature elective	3
	54- : Literature electives "300+"	12
	*54-243: Advanced Spanish Grammar is recommended.	

III	Elementary Education Requirements	35
	01-361: Measurement and Evaluation	3
	01-381/382/383: Sociology of Education <i>OR</i> Social Organization of Schools <i>OR</i> Education and Social Inequality	3
	01-392: Philosophical and Moral Issues in Education	3
	02-361: Reading: Elementary	3
	02-362: Language and Literature	3
	02-363: Mathematics: Elementary	3
	02-364: Analysis of Teaching	3

02-365:	Humanities-Social Studies	2
02-366:	Science	2
02-369:	Seminar in Elementary Education	2
02-461:	Apprentice Teaching	8
IV	Unrestricted Elective Courses	21
V	Minimum Credits for the Degree	124-126

Secondary Education

The programs in secondary education prepare students for professional certification as teachers in the secondary schools, grades 9-12. All students in secondary education programs are required to complete a major in an academic area and in secondary education. The requirements for the secondary education major are established by the Department of Curriculum and Instruction. The requirements for each of the academic majors are set by the concerned academic department in collaboration with the Department of Curriculum and Instruction. These requirements reflect those guidelines of national learned societies for academic programs which are mandated by the National Council for the Accreditation of Teacher Education. At least 15 credits of all majors must be taken at the upper-division course level. Listed below are summaries of degree requirements for the several secondary education programs.

Secondary Education and English

I	University Core Requirements	35-37 s.h
	Physical Education	2
	College Writing I and II	6
	Area I (Behavioral and Social Sciences)	9
	47-262: Adolescent Psychology required.	
	One elective in American History required.	
	One other elective required.	
	Area II (Fine Arts and Humanities)	9
	Two electives in Intermediate Foreign Language required.	
	One other elective required (non-English)	
	Area III (Mathematics and Science)	9-11
	One elective in mathematics required.	
	Two electives in science required.	
II	English Requirements	36
	42-201: Great Books of Antiquity	2
	42-289: Analysis of Modern English <i>OR</i> 42-307: History and Development of English Language	2
	42-291: History of English Literature I	2
	42-292: History of English Literature II	2
	42-293: History of American Literature I	2
	42- : History of American Literature II	2
	42-297: Methods of Literary Study	2
	42-3 : Elective "300+", Category I, II, or III	2
	42-3 : Elective "300+", Category I, II, or III	2
	42-3 : Elective "300+"	2
	42-3 : Elective in American Lit. (post 1820), "300+"	2
	42-423/423: Shakespeare I or II	2

III	Secondary Education Requirements	30
	01-371: Educational Psychology	3
	01-381/382/383: Sociology of Education <i>OR</i> Social Organization of Schools <i>OR</i> Education and Social Inequality	3
	01-392: Philosophical and Moral Issues in Education	3
	02-371: Seminar in the Teaching of Writing	3
	02-372: Reading: Secondary	3
	02-373: Curriculum and Teaching of English	4
	02-379: Seminar in Secondary Education	3
	02-471/201: Apprentice Teaching	8
IV	Unrestricted Elective Courses	21
V	Minimum Credits for the Degree	122-124

Secondary Education and French (For classes of 1979 and 1980 only.)

I	University Core Requirements	35-37 s.h.
	Physical Education	2
	College Writing I and II	6
	Area I (Behavioral and Social Sciences)	9
	47-262: Adolescent Psychology required.	
	One elective in American History required.	
	One other elective required.	
	Area II (Fine Arts and Humanities)	9
	One elective in literature required (non-French).	
	Two other electives required (non-French).	
	Area III (Mathematics and Science)	9
	One elective in mathematics required.	
	Two electives in science required.	
II	French Requirements	36
	50-231: French Oral Expression I	3
	50-232: French Oral Expression II	3
	50-242: French Phonetics and Diction	1
	50-244: Advanced French Grammar	3
	50-246: Advanced French Conversation	3
	50-249: French Through Light and Sound	2
	50-348: Advanced French Composition	3
	50-301: Middle Ages, Renaissance, and Classicism	3
	50-302: Enlightenment and Romanticism	3
	50-303: Realism to the Present	3
	50-372: Applied Linguistics	3
	50-4 : Literature elective "400"	3
	50-4 : Literature elective "400"	3
III	Secondary Education Requirements	30
	01-361: Measurement and Evaluation	3
	01-371: Educational Psychology	3
	01-381/382/383: Sociology of Education <i>OR</i> Social Organization of Schools <i>OR</i> Education and Social Inequality	3
	01-392: Philosophical and Moral Issues in Education	3
	02-372: Reading: Secondary	3
	02-374: Curriculum and Teaching of Languages	4
	02-379: Seminar in Secondary Education	3
	02-471/202: Apprentice Teaching	8
IV	Unrestricted Elective Courses	21
V	Minimum Credits for the Degree	122-124

Secondary Education and History

I	University Core Requirements	35-37 s.h.
	Physical Education	2
	College Writing I and II	6
	Area I (Behavioral and Social Sciences)	9
	47-262: Adolescent Psychology required.	
	Two other electives required (non-History)	
	Area II (Fine Arts and Humanities)	9
	One elective in literature required.	
	Two other electives required.	
	Area III (Mathematics and Science)	9-11
	One elective in mathematics required.	
	Two electives in science required.	
II	History Requirements	36
	43-105: Western Civilization to 1715	3
	43-106: Western Civilization since 1715	3
	43-296: Introduction to Historical Method	3
	43- : American History "200+"	6
	43- : European History "200+"	6
	43-3 : American History "300"	6
	43-3 : Third World History "300"	3
	43-3 : Elective "300"	3
	43-432: Research Seminar in History	3
III	Secondary Education Requirements	30
	01-361: Measurement and Evaluation	3
	01-371: Educational Psychology	3
	01-381/382/383: Sociology of Education <i>OR</i> Social Organization of Schools <i>OR</i> Education and Social Inequality	3
	01-392: Philosophical and Moral Issues in Education	3
	02-372: Reading: Secondary	3
	02-377: Curriculum and Teaching Social Studies	4
	02-379: Seminar in Secondary Education	3
	02-471/205: Apprentice Teaching	8
IV	Unrestricted Elective Courses	21
V	Minimum Credits for Degree	122-124

Secondary Education and Political Science (For classes of 1979 and 1980 only.)

I	University Core Requirements	35-37 s.h.
	Physical Education	2
	College Writing I and II	6
	Area I (Behavioral and Social Sciences)	9
	47-262: Adolescent Psychology required.	
	One elective in American History required.	
	One other elective required (non-Political Science).	
	Area II (Fine Arts and Humanities)	9
	One elective in literature required.	
	Two other electives required.	
	Area III (Mathematics and Science)	9-11
	One elective in mathematics required.	
	Two electives in science required.	

II	Political Science Requirements	33
	46-101: Introduction to American Politics	3
	46-201: Introduction to Political Analysis	3
	46- : American Law and Politics	3
	46- : Comparative and International Politics	3
	46- : Political Thought and Theory	3
	46- : Elective	3
	46-3 : Elective "300"	3
	46-3 : Elective "300"	3
	46-3 : Elective "300"	3
	46-3 : Elective "300"	3
	46-432: Research Seminar in Politics	3
III	Secondary Education Requirements	30
	01-361: Measurement and Evaluation	3
	01-371: Educational Psychology	3
	01-381/382/383: Sociology of Education <i>OR</i> Social Organization of Schools <i>OR</i> Education and Social Inequality	3
	01-392: Philosophical and Moral Issues in Education	3
	02-372: Reading: Secondary	3
	02-377: Curriculum and Teaching Social Studies	4
	02-379: Seminar in Secondary Education	3
	02-471/205: Apprentice Teaching	8
IV	Unrestricted Elective Courses	24
V	Minimum Credits for Degree	122-124

Secondary Education and Psychology (For classes of 1979 and 1980 only.)

I	University Core Requirements	35-37 s.h.
	Physical Education	2
	College Writing I and II	6
	Area I (Behavioral and Social Sciences)	9
	One elective in American History required.	
	Two other electives required (non-Psychology).	
	Area II (Fine Arts and Humanities)	9
	One elective in literature required.	
	Two other electives required.	
	Area III (Mathematics and Science)	9-11
	One elective in mathematics required.	
	Two electives in science required.	
II	Psychology Requirements	33
	47-111: Principles of Psychology I	3
	47-112: Principles of Psychology II	3
	47-209/328/335/355: Social Psychology <i>OR</i> Dynamics of Interpersonal Relations <i>OR</i> Psychology and Women <i>OR</i> Community Psychology	3
	47-232/272: Psychology of Personality <i>OR</i> Abnormal Psychology	3
	47-262: Adolescent Psychology	3
	47-269: Research Methods	3
	47-383/384/385/386: Experimental Psychology: Learning <i>OR</i> Motivation <i>OR</i> Sensation and Perception <i>OR</i> Social	3

47-3 : Elective "300"	3
47-3 : Elective "300"	3
47-4 : Elective "400"+	3
47-4 : Elective "400"+	3
+Select from 47-473, 47-474, 47-475, 47-476, 47-477, 47-496	
III Secondary Education Requirements	30
01-361: Measurement and Evaluation	3
01-371: Educational Psychology	3
01-381/382/383: Sociology of Education <i>OR</i> Social Organization of Schools <i>OR</i> Education and Social Inequality	3
01-392: Philosophical and Moral Issues in Education	3
02-372: Reading: Secondary	3
02-376: Curriculum and Teaching Psychology	4
02-379: Seminar in Secondary Education	3
02-471/204: Apprentice Teaching	8
IV Unrestricted Elective Courses	24
V Minimum Credits for Degree	122-124

Secondary Education and Sociology (For classes of 1979 and 1980 only.)

I University Core Requirements	35-37 s.h.
Physical Education	2
College Writing I and II	6
Area I (Behavioral and Social Sciences)	9
47-262: Adolescent Psychology required.	
One elective in American History required.	
One other elective required (non-Sociology).	
Area II (Fine Arts and Humanities)	9
One elective in literature required.	
Two other electives required.	
Area III (Mathematics and Science)	9-11
One elective in mathematics required.	
Two electives in science required.	
II Sociology Requirements	33
48-101: Introduction to Sociology	3
48- : Elective	3
48- : Elective	3
48- : Elective	3
48- : Elective	3
48- : Elective	3
48-321: Social Theory	3
48-3 : Elective "300"	3
48-3 : Elective "300"	3
48-402: Sociological Research	3
48-4 : Elective "400"	3
III Secondary Education Requirements	30
01-361: Measurement and Evaluation	3
01-371: Educational Psychology	3
01-381/382/383: Sociology of Education <i>OR</i> Social Organization of Schools <i>OR</i> Education and Social Inequality	3
01-392: Philosophical and Moral Issues in Education	3
02-372: Reading: Secondary	3

02-377: Curriculum and Teaching Social Studies	4
02-379: Seminar in Secondary Education	3
02-471/205: Apprentice Teaching	8
IV Unrestricted Elective Courses	24
V Minimum Credits for the Degree	122-124

Secondary Education and Spanish (For classes of 1979 and 1980 only.)

I University Core Requirements	35-37 s.h.
Physical Education	2
College Writing I and II	6
Area I (Behavioral and Social Sciences)	9
47-262: Adolescent Psychology required.	
One elective in American History required.	
One other elective required.	
Area II (Fine Arts and Humanities)	9
One elective in literature required (non-Spanish).	
Two other electives required (non-Spanish).	
Area III (Mathematics and Science)	9-11
One elective in mathematics required.	
Two electives in science required.	
II Spanish Requirements	36
54-231: Spanish Oral Expression I	3
54-232: Spanish Oral Expression II	3
54-245: Advanced Spanish Conversation	3
54-347: Advanced Spanish Composition	3
54-372: Applied Linguistics	3
54- : Language electives*	6
54- : Literature elective	3
54- : Literature electives "300+"	12
*54-243: Advanced Spanish Grammar is recommended.	
III Secondary Education Requirements	30
01-361: Measurement and Evaluation	3
01-371: Educational Psychology	3
01-381/382/383: Sociology of Education OR Social Organization of Schools OR Education and Social Inequality	3
01-392: Philosophical and Moral Issues in Education	3
02-372: Reading: Secondary	3
02-374: Curriculum and Teaching of Languages	4
02-379: Seminar in Secondary Education	3
02-471/202: Apprentice Teaching	8
IV Unrestricted Elective Courses	21
V Minimum Credits for the Degree	122-124

DEPARTMENT OF EDUCATIONAL FOUNDATIONS

Richard Lyons, Chairperson

Professor: Richard Lyons

Associate Professors: John Catallozzi, Michael D'Elia, Robert Wagner

Assistant Professor: William Phelan

The Department of Educational Foundations provides course offerings in the humanistic and behavioral science foundations of education. These courses are integral aspects of elementary and secondary education curricula and provide students with sets of contexts in which educational problems can be understood and interpreted. The Department also provides course offerings in educational measurement, educational statistics, research design, educational psychology, sociology, and philosophy for both undergraduate and graduate programs. Undergraduate course offerings in the humanistic and behavioral science foundations of education are open on a space available basis to students who are matriculating for degrees in other colleges of the University. Admission to these courses requires the approval of the Department Chairperson.



FACULTY OF THE COLLEGE OF EDUCATION

DEAN OF THE COLLEGE

Margaret R. Shannon, B.S., Ed.M., Ed.D.

CHAIRPERSONS

M. Virginia Biggy, B.S., Ed.M., Ed.D.; Curriculum and Instruction

Richard G. Lyons, B.S., Ed.M., Ph.D.; Educational Foundations

RESIDENT FACULTY

Norman F. Benson, Assistant Professor, Social Science Education; B.S., A.M., University of Minnesota; Ed.D., Ball State University.

M. Virginia Biggy, Professor, Curriculum and Instruction; B.S., Ed.M., Ed.D., Boston University.

John J. Catallozzi, Associate Professor, Educational Psychology; B.S., University of Lowell; Ed.M., Ed.D., Boston University.

William F. Coughlin, Assistant Professor, English Education; B.S., University of Lowell; A.M., Middlebury College; Ed.D., University of Massachusetts.

Michael T. D'Elia, Associate Professor, Measurement and Research; A.B., M.B.A., Dartmouth College; Ph.D., Cornell University.

Penelope Z. Demogenes, Associate Professor, Mathematics Education; B.S., University of Lowell; Ed.M., C.A.G.S., Boston University.

Alice C. Kiernan, Associate Professor, Language Education; B.S., University of Lowell; Ed.M., Boston University.

Edward R. Lilly, Assistant Professor, Educational Administration; A.B., Morgan State College; M.S., City University of New York; Ph.D., University of Connecticut.

Richard G. Lyons, Professor, Educational Philosophy; B.S., Ed.M., Ph.D., Boston University.

Anne McParland, Associate Professor, Reading Education; B.S., University of Lowell; C.A.S., Harvard University; Ed.M., Ed.D., Boston University.

Dorothy V. Meyer, Assistant Professor, Educational Administration; A.B., Houghton College; Ed.M., Ed.D., Boston University.

William T. Phelan, Assistant Professor, Educational Sociology; A.B., Boston College; A.M., Catholic University; Ph.D., University of Chicago.

Margaret R. Shannon, Professor, Reading Education; B.S., University of Lowell; Ed.M., Ed.D., Harvard University.

Robert B. Wagner, Associate Professor, Educational Philosophy; B.S., Ohio State University; A.M., Kent State University; Ed.D., Harvard University.

ADJUNCT FACULTY

Ado Commito, Curriculum and Instruction; B.S., Ed.M., Ed.D., Boston University.

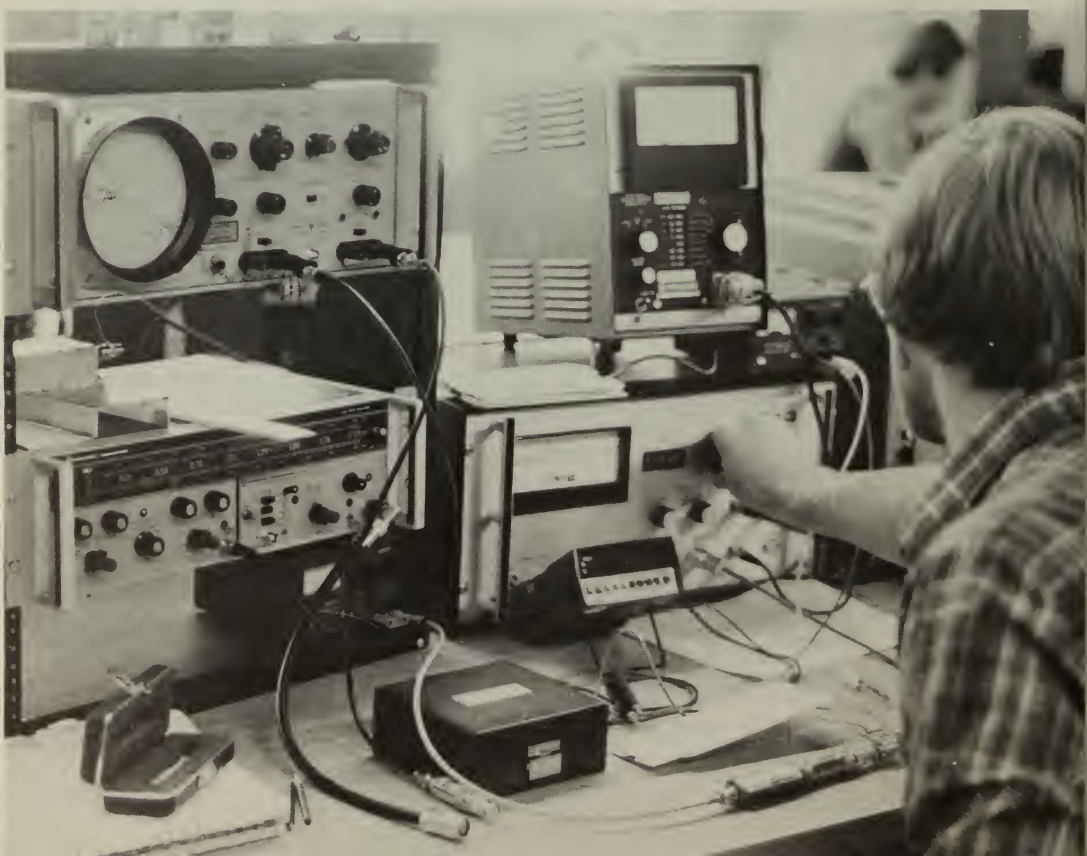
Anne McCarthy, Curriculum and Instruction; A.B., Emmanuel College; A.M., Boston College.

Jacqueline Phaneuf, Curriculum and Instruction; B.S., Lowell State College; A.M., University of New Hampshire.

VISITING LECTURERS

Liisa A. Liedes, Curriculum and Instruction; A.B., Clark University; M.F.A., Boston University; Ph.D., Pennsylvania State University.

Judith C. Lombard, Curriculum and Instruction; B.F.A., Massachusetts College of Art; M.A.T., Brown University; C.A.G.S., Boston University.



COLLEGE OF ENGINEERING

Aldo Crugnola, Dean

Broadly defined, engineering is a profession which seeks to apply scientific knowledge for the improvement of society. The engineer must be able to identify problems, creatively design solutions, build and implement. In order to develop economic and socially acceptable ways to use available resources for the benefit of mankind, the engineer is constantly in search of a better way, a better design, and a more imaginative and effective system and is called upon to combine knowledge of science, mathematics, and "state of the art" techniques with judgment based upon experience.

Recognizing that the engineering needs of society are many and varied and that the interests, motivations, and competencies of students are similarly diverse, the College of Engineering has developed a broad spectrum of engineering-education programs to serve the needs of the engineering community and the student body. Although the emphasis within each engineering program is specific and technical, all programs have that educational breadth which distinguishes a professional curriculum.

OBJECTIVES OF THE COLLEGE OF ENGINEERING

The educational objective of the College of Engineering is to prepare students for entrance into the profession of engineering. In recognition of the variety of professional activities involved, the programs have been designed to allow students to elect to enter the practice of engineering after completion of an undergraduate degree or to delay entrance until they have obtained a graduate degree. Faculty advisors are assigned to each student in order to provide experienced guidance to the student in the selection of his or her particular program.

COLLEGE ORGANIZATION & GOVERNANCE

The College of Engineering is organized into seven departments and is administered by a dean. Each department is responsible for developing its course offerings and programs of study and the engineering faculty, as a whole, is responsible for all academic policies of the College. The Academic Standards Committee is responsible for enforcing the academic standards of the College and also serves as a review body for suspended students seeking readmission with probationary status.

Academic Standards Committee

Richard V. Barone, Industrial Technology
Roger Baumann, Electrical Engineering, Chairperson
Aldo M. Crugnola, Dean
Norwood Keeney, Jr., Chemical Engineering
John A. McElman, Mechanical Engineering
William Moeller, Civil Engineering
James Phelps, Nuclear Engineering
James E. Powers, Electrical Engineering
Nick R. Schott, Plastics Engineering

Industrial Advisory Committees

The engineering faculty and the several departments are assisted in formulating professional curricula by the following advisory committees. Periodic meetings are held with the advisory committees to review curricula with regard to current industrial needs and to formulate ways for promoting interaction with the technological community.

College of Engineering

John Connolly, Vice President, Tau-Tron, Inc.
Leo A. Hart, Associate Department Head, Mitre Corporation
Paul Hoffman, General Manager, Specialty Materials Div., Avco Corp.
John C. Lavalley, Vice President, Century Banks
Austin Mason, President, Ludlow Corporation
Ralph L. Mondano, Operations Manager, 3M Company
J. Harry Parker, Director of Operations, Cullinan Engineering Co., Inc.
Arthur Pingalore, Director of Training, Heald Machine Div., Cinn. Milicron, Inc.
William Thurston, President, GenRad Inc.
Joe Turnage, Nuclear Engineer & Development Mgr., Yankee Atomic Electric Co.

Chemical Engineering

Philip R. Askman, Vice President, Chas. T. Main Co.
Ralph H. Martin, President, C.H. Dexter & Sons
Austin B. Mason, Chairman, President of Ludlow Corporation
Everett C. Reed, President, Albany International

Civil Engineering

Harl P. Aldrich, President, Haley & Aldrich
John Bethel, Jr., President, Bethel, Duncan & O'Rourke, Inc.
Bruce Hanes, Chairman, Civil Engineering Department, Tufts University
John Jarnis, President, Barnes & Jarnis Inc.
J. Harry Parker, Director of Operations, Survey Division, Cullinan Engineering Company Inc.
Bartlett W. Paulding, Chief Engineering Geologist, Geotechnical Engineers, Inc.
Charles A. J. Theodore, President, Hometech Consultants Inc.

Electrical Engineering

Joseph F. Alibrandi, Plant Manager, Raytheon Company
Walter S. Baird, President, Baird-Atomic, Inc.
W. Clare Brooks, Consultant, Andover
Martin Schilling, Project Director, Raytheon Company
Paul G. Yewell, President, Yewell Associates, Inc.

Industrial Technology Department

W. Glenndaniel, Tech. Director of Engineering, Bolton Emerson
Earl Hollingworth, Director of Industrial Engineering, Joan Fabrics Inc.
Arthur Pingalore, Director of Training, Heald Division, Cinn. Milicron Inc.
Norbert Schwartz, Employment Manager, GenRad Inc.

Mechanical Engineering

James Henshaw, Senior Staff Engineer, Avco Corp.
Sander Nydick, Program Manager, Thermo Electron Corp.
Robert D. Pepe, President, R. D. P., Inc.
Eugene Robinson, Vice President, Operations, Lowell Gas Company
George Roehr, President, Roehr Tool Company

Nuclear Engineering

Charles Adey, Supervisory Plant Manager Services Group, Stone & Webster
Sten Caspersson, Project Manager, Fast Breeder Reactor Development, Combustion Engineering
Eric Clarke, Vice President, Tech/Ops. Inc.
Keith Dinger, Director, Radiation Health, Portsmouth Naval Shipyard
Michael Driscoll, Massachusetts Institute of Technology, Associate Professor N.E. Radiation Health
John C. Garth, Physicist (Solid State), U.S. Air Force, Hanscom Field

Plastics Engineering

Thomas J. Conlon, President, Contour Chemical Company
Joseph C. Day, Regional Sales Manager, Plastics Department, General Electric Co.
F. Reed Estabrook, Consultant
Neil T. Flathers, Vice President, CDF Chemicals Corporation
Robert D. Forger, Executive Secretary, Society of Plastic Engineers, Inc.
Iver J. Freeman, Vice President, Reed-Prentice Company
Louis Gable, Manager, Application Development, Mobay Chemical Company
Richard Ingraham, President, Albany Plastics
Ralph L. Mondano, Operations Manager, 3M Company
John O'Toole, Technical Manager, Allied Chemical Company
Joseph Rich, Development Engineer, Thermoplastics Division Mobay Chemical Co.
Malcolm W. Riley, Editor, Plastics World Magazine
Dominick V. Rosato, Editor, Plastics World Magazine
Albert Spaak, Executive Director, Plastics Institute of America
Steve Vitkovits, Engineering Manager, Manufacturing Division Hewlett-Packard
James Zimmerman, Manager, Advanced Manufacturing and Development, Saline Plant, Ford Motor Co.

BACCALAUREATE DEGREE PROGRAMS

The College of Engineering offers undergraduate programs leading to the degrees of Bachelor of Science in Engineering and Bachelor of Science in Technology. Course requirements for engineering and technology degrees have been determined by specific professional objectives and are subject to the recommendations of the Engineers Council for Professional Development. Each course of study provides a basic general education, scientific-technological training in the sciences, and a comprehensive introduction to an engineering or technology field. Course requirements are specified in terms of the total curriculum and without reference to major and minor options which are available in Bachelor of Arts and Bachelor of Science degree programs. However, candidates for degrees in the College of Engineering may be permitted to elect additional majors in other colleges provided that all curriculum requirements in engineering or technology will be satisfied. Election of such additional majors will entail extension of the normal four-year period of undergraduate study for all but the unusual student.

Students who wish to elect a major which is offered by another college of the University are candidates only for degrees in the College of Engineering and are subject only to major course requirements (including any collateral and prerequisite courses for the elected major) as specified by the major department. (Cf. relevant policies which appear elsewhere in this publication under the heading "Academic Policies: Major Field Requirements.") Students who are interested in satisfying degree requirements in both the College of Engineering and another college should inquire if dual degree programs can be authorized. (Cf. "Academic Policies: Dual Degree Programs.")

The Bachelor of Science in Technology degree is granted to students who pursue the program in industrial technology. The Bachelor of Science in Engineering degree is offered in the following fields: chemical engineering (paper option available in senior year), civil engineering, electrical engineering, mechanical engineering, nuclear engineering, and plastics engineering.

GENERAL COLLEGE REQUIREMENTS

Each candidate for an undergraduate degree must satisfy the general University requirements for graduation, complete all credits as specified for department curricula, and meet the specific academic requirements of the College of Engineering as specified in this section. The number of credits required for completion of College programs is established by departments.

Except for students enrolled in the industrial technology program, all students in the College of Engineering pursue a basic core program during their freshman year. Students who have completed their freshman programs with grade-point averages of 2.00 or better automatically qualify for admission to the sophomore program level. Students who fail to achieve the required freshman average will be admitted to the sophomore year of engineering programs only upon the recommendations of appropriate departmental committees and the Academic Standards Committee of the College of Engineering.

In addition to satisfying University retention and graduation requirements, each candidate for a degree in the College of Engineering must achieve the following grade-point averages in departmentally designated subjects to satisfy College retention and graduation requirements: 1.70 (end of the sophomore year), 1.90 (end of the junior year), and 2.00 (graduation). Students who fail to achieve the specified sophomore or junior year average in departmentally designated subjects have not made satisfactory progress toward their degrees and will be dismissed from the College for inadequate scholarship unless they have been granted continued matriculation status by their department and the Academic Standards Committee of the College. Individuals who fail to satisfy retention requirements and wish to petition for continued matriculation status must file an academic petition with their department chairperson. Individuals who are not granted continued matriculation in the College of Engineering and who satisfy University retention requirements may file for intercollegiate transfer within the University. Students who are dropped from the College of Engineering and who are ineligible to file for intercollegiate transfer or who are denied admission to another college following application for intercollegiate transfer are dropped from the University.

Declaration of Program and Change of Program

Students who are enrolled in the College of Engineering of necessity are committed to pursue one of the established degree programs and are encouraged to make a declaration of degree program upon enrollment. In any event, engineering students are required to declare their professional programs by the end of the freshman year or upon completion of the freshman core program and must file the appropriate form with the Office of the Registrar no later than the beginning of the sophomore year.

Students who wish to change their professional program within the College of Engineering must secure the approval of the chairperson of the appropriate department of the College. Students who wish to drop their engineering or industrial technology program and to add a major which is offered by another college of the University must apply for intercollegiate transfer. All changes of program require notification of the Office of the Registrar through the filing of the form for declaration of major or change of major.

Additional course work beyond the minimum degree requirements and extension of the normal four-year period of study may be expected for students who change their programs within the College of Engineering after the first semester of the junior year. Qualified students may transfer into degree programs of the College of Engineering from other colleges of the University. However, students making such transfer may expect to extend their period of study beyond the normal four-year period, particularly if they transfer after the first semester of the sophomore year.

Transfer Policies

Students transferring to the College of Engineering from other colleges of the University or from other institutions may expect recognition of previously completed courses if these are equivalent to those which are specified by curricula of the College. Irrespective of any previous recognition by the Office of Admissions or by other colleges of the University, a student who transfers from another college of the University to the College of Engineering may not have courses which are prerequisites for admission to engineering or technology programs credited to minimum degree requirements of the College of Engineering.

Transfer from Other Institutions

Courses which are transferred from other institutions are initially evaluated by the Office of Admissions in terms of general University requirements when a student is admitted to the University and are also evaluated by professional departments in terms of college and program requirements at the time a student is accepted for matriculation in the College of Engineering. Courses which are transferred to the University under provisions of the Massachusetts Transfer Compact and which are not creditable to requirements of the College of Engineering or as unrestricted elective courses will be listed on the student's permanent record card but will not apply to the minimum degree requirements.

In the event that a student who has transferred to the University under the Massachusetts Transfer Compact subsequently makes an intercollegiate transfer to the College of Engineering, all previously completed courses, including transferred courses from the compact institution, will be reevaluated in terms of their applicability to degree requirements of the College of Engineering.

The applicability of grades received in transferred courses for the determination of the grade-point average of the student's major at the University of Lowell is determined by policies of each of the colleges. The policy of the College of Engineering is to count such grades for the purpose of determining the student's grade-point average in his or her professional area.

Repetition of Transferred Courses

A student who has been granted transfer credit, and on this basis has been assigned to advanced courses for which the transferred course is a prerequisite, may be advised to repeat such transferred work at the University to take a more elementary course than that which has been transferred when the competence of the student has been demonstrably inadequate. Permission to repeat a transferred course is granted by filing an academic petition form through the office of the College dean. Since credit may not be granted more than once for the completion of any course, a condition for filing such a petition is the simultaneous filing of a request to revoke recognition of the previously transferred course.

Intercollegiate Transfer to the College of Engineering

Students wishing to transfer from another college of the University, or from baccalaureate continuing-education programs of the Evening School, must file a petition, together with a transcript of their permanent record cards, with the appropriate chairperson and the Dean of the College of Engineering by November 1 for spring semester transfer and by April 1 for fall semester transfer. Students are referred to University policies concerning intercollegiate transfer which appear elsewhere in this publication under the heading "Academic Policies: Change of Major with Intercollegiate Transfer" for further procedural details. Records of students who are approved for transfer are reviewed by the Office of the Dean and, irrespective of grades previously received in other college programs, all courses which may not be applied to college or program requirements are deleted from the student's cumulative grade-point average.

COOPERATIVE EDUCATION PROGRAM

The College of Engineering is a full participant in the University Cooperative Education Work Experience Program and all engineering and technology students may elect to petition for participation in the Program. For further information, students should refer to policies which appear elsewhere in this publication under the heading "Academic Policies: Cooperative Education" and should consult with their department chairpersons.

DEPARTMENT OF CHEMICAL ENGINEERING

Norwood H. Keeney, Jr., Chairperson

Professors: Ning Chen, Charles Higgins, Norwood Keeney

Associate Professors: Huan Yang Chang, James Mann, Dominick Sama, Karl Sladek

Assistant Professors: Alfred Donatelli, John Walkinshaw

Chemical engineering is a broad-based engineering discipline which is concerned with chemical reactions, reaction kinetics, equilibria, and mass and energy transport. It is the only engineering discipline based on the science of chemistry, and chemical engineers traditionally have entered all phases of chemically oriented business and industry. More recently, the broad background of chemical engineers has allowed them to move into such fields as management, environmental protection, bio-chemical engineering, petrochemicals, polymer science, enzyme engineering and patent law.

The basic concepts of unit operations and unit processes, originally developed by chemical engineers, have proved to be effective over a wide spectrum of applications. The chemical process industry and such allied industries as paper, plastics, packaging, environmental protection, pharmaceuticals, and materials science have provided a strong and continuing growth for chemical engineering graduates.

The stability and dynamic growth of the paper industry has opened unparalleled challenges for the graduate trained in chemical engineering. Accordingly, the Department offers the interested student an opportunity to elect a block of technical electives during the senior year which constitutes an option in paper engineering. Several scholarships (\$500 per year) are available to students who elect this option.

The chemical engineering curriculum provides maximum flexibility and allows the individual to do original research. Considerable emphasis is placed on oral and written reports to provide a necessary background for the business world. Plant trips provide the essential link between theory and practice. Summer jobs in the chemical industry and the paper industry are encouraged. A number of scholarships (\$500/year) are available to undergraduates.

The broad chemical and engineering training which is imparted through the Chemical Engineering curriculum qualifies the graduate for careers in research and development, product or process development, production, sales, marketing and general management and for graduate programs in the discipline or in business administration. The Chemical Engineering curriculum is accredited by the Engineers' Council for Professional Development. The Department encourages students to take the E.I.T. examination in order to qualify as Registered Professional Engineers following graduation.

COURSE OF STUDY FOR CHEMICAL ENGINEERING

Freshman Year

Fall Semester		Spring Semester	
* 84-121 Chemistry	3	* 84-126 Chemistry	3
* 84-123 Chemistry Lab	1	* 84-124 Chemistry Lab	1
42-101 College Writing	3	42-102 College Writing & Literature	3
92-131 Calculus B-I		92-132 Calculus B-II	
or		or	
92-133 Calculus A-I	4	92-134 Calculus A-II4	
* 95-141 Physics I	3	95-144 Physics II	3
* 96-141 Fundamentals of Experimental Physics I	1	* 96-144 Fundamentals of Exp. Physics II	1
Physical Education		Physical Education	
	15		15
* 84-135 Honors Chemistry and 84-137 Honors Chemistry Lab		* 84-136 Honors Chemistry and, 84-138 Honors Chemistry Lab,	
95-147 Honors Physics and 96-147 Fund. of Exp. Physics I		95-148 Honors Physics and 96-148 Fund. of Exp. Physics II	
may be substituted		may be substituted	

Sophomore Year

Fall Semester		Spring Semester	
84-221 Organic Chemistry IA	3	84-222 Organic Chemistry IIA	3
84-229 Organic Chem. Lab IA	1	84-230 Organic Chem. Lab IIA	1
10-203 Intro. to Chem. Eng.	3	10-204 Chem. Eng. Calculations	3
10-207 Comp. Prog. for Chem. Eng.	2	10-206 Fluid Mechanics	2
92-231 Calculus B-III	4	10-208 Unit Ops. Lab. I	1
or		92-234 Differential Equations	3
92-233 Calculus A-III	3	22-216 Analytic Mechanics II	3
22-201 Graphics	1	64-202 Economics II	3
22-215 Analytic Mech. I	3		
64-201 Economics I	3		
	19-20		19

Junior Year

Fall Semester		Spring Semester	
10-305 Heat Transfer	3	84-336 Princ. of Phys. Chem.	3
10-311 Chem. Eng. Thermodynamics	3	84-338 Princ. of Phys. Ch. Lab.	1
10-315 Unit Ops Lab. II	1	10-306 Transport Phenomena	3
16-348 Elec. Eng. Concepts	3	10-308 Engineering Materials	3
92-317 Applied Math. for Chem. Eng.	3	10-310 Separation Processes	3
Humanistic Social Elec.	3	10-316 Unit Ops Lab III	1
		84-324 Princ. Ana. Chem.	3
		84-325 Princ. Ana. Chem. Lab.	1
	16		18

Senior Year

Fall Semester		Spring Semester	
10-403 Reactor Design and Kinetics	3	10-410 Plant Design	3
10-409 Economics & Process Analysis	3	10-416 Process Dynamics and Control Lab.	2
10-413 Process Dynamics and Control	3	Technical Elective	3
Technical Elective	3	* ROTC or Technical Elective	3
* ROTC or Technical Elective	3	Area I or II Elective	3
Area I or II Elective	3	Area I or II Elective	3
	18		17

Students electing the Option in Paper Engineering will take the following courses in their Senior Year as Technical Electives:

10-401 Paper Industry Process Analysis	3
10-402 Eng. Anal. of Coating & Converting Systems	3
10-404 Process Cal. of Pulp & Paper Processes	3
10-405 Design of Papers	4
10-419 Special Projects	1



DEPARTMENT OF CIVIL ENGINEERING

William Moeller, Chairperson

Professors: William Haskell, Herman Shea

Associate Professors: Nathan Gartner, Donald Leitch, William Moeller, Charles Ott, John Sewell,
Cetin Soydemir, Louis Tartaglione

Assistant Professors: Anthony Cirrito, Burton Segall, Gabor Szava-Kovats

Civil engineering is that branch of engineering charged with the planning, design, construction and operation of works vital to man's activities in his relation to the environment. The concerns of the civil engineer include the gathering and processing of environmental information; avenues of transportation; facilities and structures to accommodate domestic, business, industrial, scientific, and recreational pursuits; the control and management of the forces of nature as such affect the environment; the treatment and disposal of solid, liquid and aerial waste; and the adaption of materials, natural or man-made, to the works under his control.

Because of the broad range of the civil engineer's activities, this curriculum is based on a breadth of scientific and engineering principles. Such fundamentals are then expanded into specialized subjects to provide a comprehensive and basic training in the responsibilities of the civil engineer.

Graduates of civil engineering are prepared to apply their training to highways, railroads, airports, pipelines and waterways; bridges, dams, canals and levees; filtration plants and distribution systems for municipal and industrial water supplies and sewage and waste treatment plants; and civil engineering aspects of high-rise buildings, power plants, industrial, military and space facilities. After advanced training, the areas of research and teaching are also open to civil engineering graduates.

The civil engineering curriculum is accredited by the Engineers Council for Professional Development.

COURSES OF STUDY FOR CIVIL ENGINEERING

Freshman Year

Fall Semester		Spring Semester	
42-101 College Writing	3	42-102 College Writing & Literature	3
* 84-121 Chemistry	3	* 84-126 Chemistry	3
* 84-123 Chemistry Lab	1	* 84-124 Chemistry Lab	1
92-131 Calculus B-I		92-132 Calculus B-II	
or		or	
92-133 Calculus A-I	4	92-134 Calculus A-II	4
+ 95-141 Physics I	3	+ 95-144 Physics II	3
+ 96-141 Fund. of Exp. Physics I	1	+ 96-144 Fund. of Exp. Physics II	1
Physical Education		Physical Education	
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15		15	
* 84-135 Honors Chemistry and, 84-137 Honors Chemistry Lab,		* 84-136 Honors Chemistry and, 84-138 Honors Chemistry Lab,	
+ 95-147 Honors Physics and, 96-147 Fundamentals of Experimental Physics I may be substituted.		+ 95-148 Honors Physics and, 96-148 Fundamentals of Experimental Physics II may be substituted.	

Sophomore Year

Fall Semester		Spring Semester	
14-203 Statics	3	14-204 Strength of Materials	3
14-220 Surveying I	4	14-221 Surveying II	4
14-223 Graphics	1	42-112 Tech. & Scientific Comm.	3
92-231 Calculus B-III	4	92-234 Differential Equations	3
or		92-362 Numerical Analysis	3
92-233 Calculus A-III	3		
92-261 Digital Computer Programming	2		
95-245 Physics III	3		
96-245 Fund. of Exp. Physics III	1		
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17 or 18		16	

Junior Year

Fall Semester		Spring Semester	
14-310 Engineering Materials	3	14-301 Fluid Mechanics	3
14-350 Structural Analysis	4	14-340 Transportation	4
14-305 Dynamics I	3	14-351 Structural Design I	4
64-201 Economics I	3	22-347 Elements of Thermodynamics	
Area I or II Elective	3	& Heat Transfer	3
		64-202 Economics II	3
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16		17	

Senior Year

Fall Semester		Spring Semester	
14-430 Soil Mechanics I	3	14-431 Foundation & Soil Eng.	3
14-460 Water Resources Engineering	3	14-461 Water Resources Designs	3
16-348 Basic Electrical Engineering		16-214 Electrical Machinery Lab.	1
Concepts	3	92-414 Math. Methods in	
Area I or II Elective	3	Engineering Management	3
Area I or II Elective	3	Area I or II Elective	3
* ROTC or Civil Elective	3	* ROTC or Civil Elective	3
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18		16	



DEPARTMENT OF ELECTRICAL ENGINEERING

James E. Powers, Chairperson

Professors: Roger Bauman, Earle Laste, Jr., James Powers

Associate Professors: Francisco Bacchialoni, Ronald Brunelle, Peter Burger, F. Ross Holmstrom, Robert Lemieux, Paul Murphy, Frederick Rojak, David Wade

Assistant Professors: George Cheney, Donn Clark, Robert Dirkman, John Leonard, Martin Patt, H. James Rome, Edward Sayre, Stephen Spurk, David Wunsch

Electrical engineering is a dynamic field, receiving much of its stimulus from contemporary breakthroughs in the pure sciences. Because engineering disciplines continuously incorporate new concepts and developments, a viable engineering education cannot be limited to the acquisition of specific skills and methods but also must provide the student with a deep understanding of both the current and the emerging engineering field.

Accordingly, the electrical engineering curriculum provides a thorough grounding in electrical science and engineering, together with an intensive training in mathematics, and emphasizes the techniques of experimental science and technology through investigative laboratory work and classroom lecture-demonstrations. Specialization at the undergraduate level is, in general, discouraged. Interdisciplinary study is fostered by a relatively flexible elective system.

An important aspect of the electrical engineering curriculum is the technical elective program of the senior year. Technical electives provide opportunities for broadening or deepening technical knowledge in a flexible manner and in accordance with student interests and competencies. Normally, such electives are senior-level electrical engineering courses. However, courses in scientific subjects may be taken from the offerings of the College of Engineering or the College of Pure and Applied Sciences up to a maximum of 6 credits when approved by the academic advisor. Approval of such scientific courses is ordinarily granted when their technical content is more advanced than that of required courses in the same areas.

A significant portion of the curriculum is devoted to studies in the humanities and social sciences and considerable choice of subjects is allowed. These subjects broaden the student's outlook and serve to focus attention on the importance of nontechnical knowledge in determining the student's ultimate level of responsibility in professional life.

Many of the courses required in the electrical engineering curriculum are heavily dependent upon mathematical techniques. It is therefore recommended that a freshman seeking admission into the sophomore year in electrical engineering should have received grades of not less than "C" in all freshman mathematics and physics courses. This curriculum is accredited by the Engineer's Council for Professional Development.

COURSES OF STUDY FOR ELECTRICAL ENGINEERING

Freshman Year

Fall Semester		Spring Semester	
* 84-121 Chemistry	3	* 84-126 Chemistry	3
* 84-123 Chemistry Lab	1	* 84-124 Chemistry Lab	1
42-101 College Writing	3	42-102 College Writing & Literature	3
92-131 Calculus B-I		92-132 Calculus B-II	
or		or	
92-133 Calculus A-I	4	92-134 Calculus A-II	4
+ 95-141 Physics I	3	+ 95-144 Physics II	3
+ 96-141 Fund. of Exp. Physics I	1	+ 96-144 Fund. of Exp. Physics II	1
Physical Education		Physical Education	
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15		15	
* 84-135 Honors Chemistry and, 84-137 Honors Chemistry Lab,		* 84-136 Honors Chemistry and, 84-138 Honors Chemistry Lab,	
+ 95-147 Honors Physics and, 96-147 Fund. of Experimental Physics I may be substituted.		+ 95-148 Honors Physics and, 96-148 Fund. of Experimental Physics II may be substituted.	

Sophomore Year

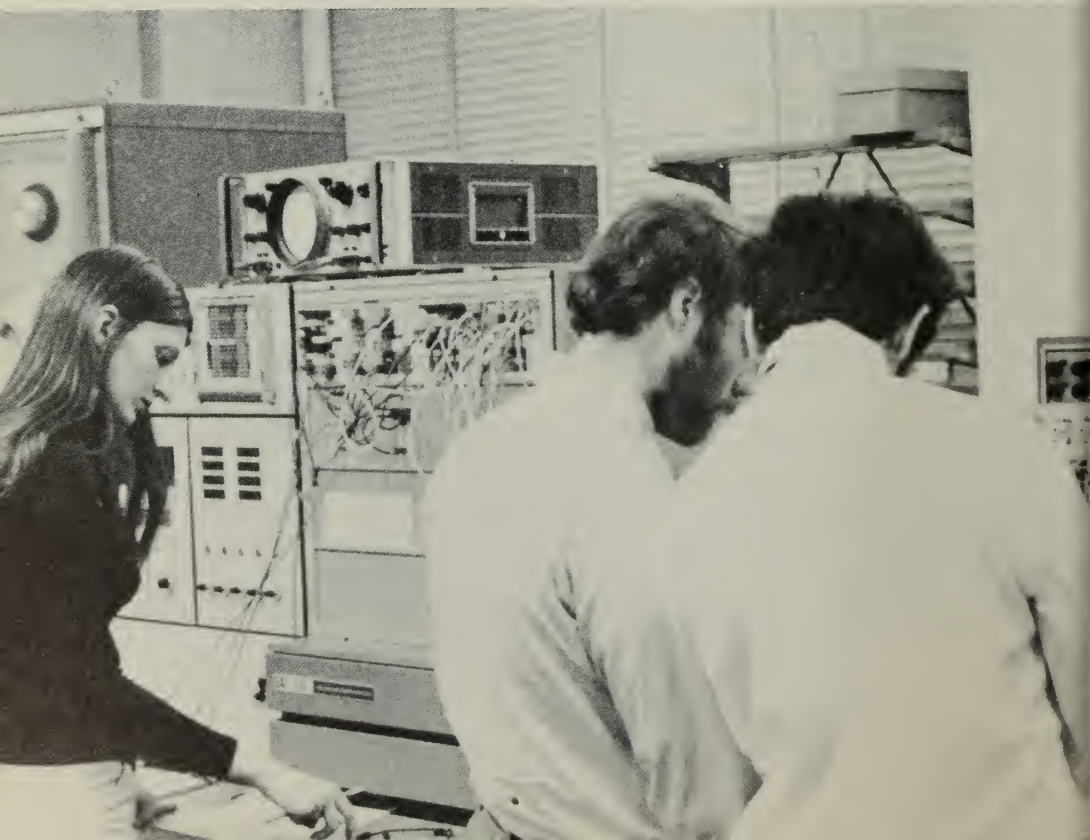
Fall Semester		Spring Semester	
64-201 Economics I	3	64-202 Economics II	3
16-201 Intro. Circuit Theory I	4	16-202 Intro. Circuit Theory II	4
16-207 Basic Elec. Eng. Lab. I	2	16-208 Basic Elec. Eng. Lab. II	2
16-227 Intro. Computer Programming	1	16-228 Prog. & App. of Digital Comp.	3
92-231 Calculus B-III	4	92-234 Differential Equations	3
or			
92-233 Calculus A-III	3		
95-245 Physics III	3		
96-245 Fund. of Exp. Physics III	1		
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17 or 18		15	

Junior Year

Fall Semester		Spring Semester	
16-311 Electronics Laboratory I	2	16-312 Electronics Laboratory II	2
16-355 Intro. Electromechanics	3	16-360 Electromagnetic Theory I	3
or		16-362 Signal and System Analysis	3
16-362 Signal and System Analysis	3	or	
16-365 Electronics I	3	16-355 Introductory Electromechanics	3
92-315 Complex Variables for Eng.	3	16-366 Electronics II	3
Area I or II Elective	3	22-212 Introductory Mechanics	4
Area I or II Elective	3	Area I or II Elective	3
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17		18	

Senior Year

Fall Semester		Spring Semester	
16-413 Linear Feedback Systems	3	Technical Elective	3
or Technical Elective	3	or	
16-461 Electromagnetic Theory II	3	16-413 Linear Feedback Systems	3
22-347 Elements or Thermodynamics & Heat Transfer	3	Technical Electives	6
ROTC or Undesignated Elective	3	ROTC or Undesignated Elective	3
Area I or II Elective	3	Area I or II Elective	3
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15		15	



DEPARTMENT OF INDUSTRIAL TECHNOLOGY

John Goodwin, Chairperson

Professor: John Goodwin

Associate Professors: Hans Apfelbaum, Bernard Harcourt, Robert McVicker

Assistant Professors: Richard Barone, David Colling

The industrial technology program prepares students for professional careers in such rapidly expanding fields as production, manufacturing, operational systems, and the operation and management of water and wastewater treatment facilities in the public, private, and industrial sectors. The industrial technology program, which is designed to increase the variety of educational opportunities available to students who wish to pursue careers which encompass a broad spectrum of activities ranging from engineering science to business administration, is offered with a manufacturing option and a water and wastewater option.

Industrial technology graduates from the manufacturing option, by drawing upon both theoretical knowledge and industrial skills, will be in a position to direct manufacturing operations, establish and supervise production procedures, supervise the flow of supplies and products, and, in general, cope with technical and managerial aspects of modern industry and institutions. The majority of the graduates enter directly into industry. A small but significant number pursue graduate study in such fields as manufacturing engineering, industrial education, business administration, health care and delivery systems.

Graduates from the water and wastewater treatment option are trained to assume responsibility for operational areas at large treatment facilities, and to become senior operators at smaller plants. Their training in physical, chemical and biological systems also provides capabilities for obtaining positions of technical and managerial responsibility at chemical and other "wet process" industries.

A significant feature of the industrial program option is the possibility to incorporate for academic credit-supervised industrial experience. This experience, together with the theoretical and applied background provided by the University, will make the graduate flexible and capable of adapting to a wide variety of industrial organizations and problems.

The curriculum of each option is a carefully organized program which provides a well-balanced education. Approximately forty percent of each curriculum pertains to technical subjects (including methods for measurements, numerical and automatic control, manufacturing processes and operations) twenty percent to business subjects, twenty percent to the social sciences and humanities, and the balance to mathematics and sciences. Sufficient electives are provided to permit students to round out their primary interests or pursue their personal goals.

Because students in industrial technology aspire to a variety of professional careers, the department maintains a flexible transfer credit policy. A student without transfer credit or advanced standing will take an average of 16 credits per semester.

COURSE OF STUDY FOR INDUSTRIAL TECHNOLOGY-MANUFACTURING OPTION

Freshman Year

Fall Semester		Spring Semester	
20-105	Intro. to Engineering Design	20-171	Machine Tool Processes
42-101	College Writing	42-102	College Writing and Lit.
64-201	Economics I	92-102	Math. Analysis II
84-111	General Chemistry	95-151	Elements of Physics
92-101	Math. Analysis I	96-151	Elements of Exp. Physics
	Physical Education	66-200	Business Systems
			Physical Education
		16	16

Sophomore Year

Fall Semester		Spring Semester	
20-201	Structure of Metals	20-202	Industrial Computer Science or 92-242
20-204	Mechanics for Tech.	20-203	Industrial Power Trans.
42-112	Tech. and Scientific Comm.	26-211	Plastics
60-201	Accounting Principles I	60-202	Accounting Princ. II
92-201	Math. Analysis III	92-383	Statistics
		16	16

Junior Year

Fall Semester		Spring Semester	
16-290	Industrial Electricity	20-301	Modern Materials
16-291	Industrial Elec. Lab.	20-305	Manufacturing Processes
20-307	Fluid Power Controls	20-497	Seminar I (coop only)
66-321	Marketing Principles	or	
66-371	Operation Management Area I or II Elective*	66-372	Operation Management II
		47-101	Psychology
			Area I or II Elective*
		16	15

Senior Year

Fall Semester		Spring Semester	
20-498	Seminar II (coop only)	20-402	Manufacturing Operations
or	Technical Elective#	20-499	Seminar III (Coop only)
20-407	Inst. and Process Cont.	or	Technical Elective#
20-414	Indus. Economic Mgt.	66-353	Organizational Behavior
20-476	Statistical Quality Control		Area I or II
	Area I or II*		Elective*
	ROTC or Undesignated Elective		ROTC or Undesignated Elective
		16	15

*At least one course must be taken in Area II.

#Field of Engineering, Science, Math or Management

COURSE OF STUDY FOR INDUSTRIAL TECHNOLOGY WATER AND WASTEWATER OPTION

Freshman Year

Fall Semester		Spring Semester	
20-151	Hydraulics for Plant Operation	3	
42-101	College Writing	3	
64-201	Economics I	3	
84-111	General Chemistry	4	
92-101	Math. Analysis I	3	
	Physical Education		
		16	
			16

Sophomore Year

Fall Semester		Spring Semester	
20-251	Wastewater Treatment Plant Operation I	3	
20-253	Wastewater Treatment Lab. I	1	
42-112	Technical and Scientific Writing	3	
60-201	Accounting Principles	3	
92-201	Math. Analysis III	3	
	Elective	3	
		16	
			16

Junior Year

Fall Semester		Spring Semester	
16-290	Industrial Electricity	3	
16-291	Industrial Elec. Lab.	1	
20-351	Water Supply Treatment	3	
47-101	Psychology	3	
66-371	Operation Mgt. I	3	
	Area I or II*		
	Elective	3	
		16	
			15

Senior Year

Fall Semester		Spring Semester	
20-407	Inst. and Process Control	4	
20-414	Indus. Econ. Mgt.	3	
20-476	Statistical Quality Control	3	
	Technical Elective#	3	
	Area I or II*		
	ROTC or Undesignated Elective	3	
		16	
			15

*At least one course must be taken in Area II.

#Field of Engineering, Science, Math or Management

DEPARTMENT OF MECHANICAL ENGINEERING

John McElman, Chairperson

Professors: Frederick Bischoff, William Hogan, Robert Hollenbach, John McElman, Alan Mironer, Kenneth Rogers, Steven Serabian, G. Dudley Shepard

Associate Professors: C. Zelman Kamien, Kun Min, Ronald Murro, Eugene Niemi, Jr.

Assistant Professors: Frank Alberti, Jr., John O'Callahan, Vernon Oliver, Arthur Petrou

Because mechanical engineering is a diversified professional activity involving the development of new methods of energy production and conversion, transportation, manufacture, and fabrication, it is not possible for a student to master this field during a four-year program. The objective of the mechanical engineering curriculum is to provide a broad fundamental base from which graduates can go on to develop their skills by entering general engineering practice or pursuing an advanced engineering degree.

The first component of the curriculum consists of courses in the humanistic-social studies and the basic sciences. The purpose of this component is to broaden the student's outlook, to provide a firm understanding of fundamentals, to develop analytical techniques, and to prepare for specific technical studies.

The second component of the curriculum consists of courses which provide knowledge in a coherent area of engineering science. The purpose of this component is to form a link between the basic sciences and engineering and to introduce the methodology of engineering analysis, design, and synthesis. Three areas of engineering science have been selected for this component — solid mechanics (statics, dynamics, and mechanics of materials), thermal-transport (thermodynamics, fluid mechanics, and heat transfer), and dynamic systems (electricity, electronics, systems, and automatic controls).

The third component of the curriculum consists of advanced problems and topics in engineering design and requires the utilization of knowledge from the first two curriculum components. The purpose of the design activity is to develop skill in the use of science and creativity in the solving of engineering problems.

A variety of laboratory work is included in the curriculum in order to demonstrate the use of the experimental method in the solution of engineering problems. To permit a degree of specialization, technical electives are provided. A staff advisor system is used in order to aid the student in selecting technical electives which will be consistent with the future career plans of the student. This curriculum is accredited by the Engineers' Council for Professional Development.

COURSES OF STUDY FOR MECHANICAL ENGINEERING

Freshman Year

Fall Semester		Spring Semester	
* 84-121 Chemistry	3	* 84-126 Chemistry	3
* 84-123 Chemistry Lab	1	* 84-124 Chemistry Lab	1
42-101 College Writing	3	42-102 College Writing & Literature	3
92-131 Calculus B-I		92-132 Calculus B-II	
or		or	
92-133 Calculus A-I	4	92-134 Calculus A-II	4
+ 95-141 Physics I	3	+ 95-144 Physics II	3
+ 96-141 Fund of Exp. Physics I	1	+ 96-144 Fund. of Exp. Physics II	1
Physical Education		Physical Education	
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	15		15
* 84-135 Honors Chemistry and, 84-137 Honors Chemistry Lab		* 84-136 Honors Chemistry and, 84-138 Honors Chemistry Lab.	
+ 95-147 Honors Physics and, 96-147 Fund. of Experimental Physics I may be substituted.		+ 95-148 Honors Physics and, 96-148 Fund. of Experimental Physics II may be substituted.	

Sophomore Year

Fall Semester		Spring Semester	
16-211 Fundamentals of Elec.	3	16-212 Introductory Electronics	3
92-231 Calculus B-III	4	92-234 Differential	
or		Equations	3
92-233 Calculus A-III	3	22-205 Intro. to Mechanical Design	3
92-361 Digital Computer Programming	2	22-206 Mech. Engineering Lab. I	1
22-271 Machine Tool Laboratory	1	22-220 Mechanics of Materials I	3
22-211 Mechanics I	3	22-242 Thermodynamics	3
95-245 Physics III	3	Area I or II Elective	3
96-245 Fund. of Exp. Physics III	1		
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	16 or 17		19

Junior Year

Fall Semester		Spring Semester	
64-201 Economics I	3	64-202 Economics II	3
92-301 Adv. Calculus for Applications	3	22-308 Mech. Engineering Lab. III	1
22-307 Mech. Engineering Lab. II	1	22-320 Machine Design I	3
22-309 Dynamics I	3	22-343 Heat Transfer	3
22-382 Fluid Mechanics	3	22-354 Dynamics Systems	3
22-395 Materials Science	3	Area I or II Elective	3
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	16		16

Senior Year

Fall Semester		Spring Semester	
22-407 Mechanical Eng. Lab. IV	1	22-410 Senior Project II	2
22-409 Senior Project I	1	Technical Elective#	3
22-474 Thermodynamics Applications	3	Technical Elective#	3
22-497 Automatic Control Systems	3	Area I or II Elective	3
Area I or II Elective	3	Area I or II Elective	3
Technical Elective#	3	ROTC or Undesignated Elective	3
ROTC or Undesignated Elective	3		
<hr/>		<hr/>	
	17		17

+ ROTC Students may elect 29-402

#One of the technical electives must be in the design area.

DEPARTMENT OF NUCLEAR ENGINEERING

James P. Phelps, Chairperson & Chief Nuclear Reactor Engineer

Associate Professors: William Filippone, Jose Martin, James Sheff

Assistant Professor: Gilbert Brown

The nuclear engineering program provides each student with a sound foundation for a professional career in any aspect of the nuclear field. The central emphasis is upon the engineering, mechanics and physics principles underlying nuclear power systems. Students are given a thorough grounding in engineering science, engineering design, mathematics, and the basic sciences. Experimental techniques are demonstrated through investigative work by the student in various laboratories, and analytical techniques are enhanced through integration of computer use in various courses. Members of the Department recognize that nuclear energy, in particular, and energy technology, in general, are manifestations of diverse specializations. Accordingly, a wide range of approved technical courses are available as technical and design electives. In general, the Department recommends that electives be concentrated in one of the following areas: general nuclear engineering, fission power systems, fusion power systems, solar power systems, geothermal power systems, or materials.

COURSES OF STUDY FOR NUCLEAR ENGINEERING

Freshman Year

Fall Semester		Spring Semester	
* 84-121 Chemistry	3	* 84-126 Chemistry	3
* 84-123 Chemistry Lab	1	* 84-124 Chemistry Laboratory	1
42-101 College Writing	3	42-102 College Writing & Lit.	3
92-131 Calculus B-I		92-132 Calculus B-II	
or		or	
92-133 Calculus A-I	4	92-134 Calculus A-II	4
+ 95-141 Physics I	3	+ 95-144 Physics II	3
+ 96-141 Fundamentals of Exp. Physics I	1	+ 96-144 Fund. of Exp. Physics II	1
Physical Education			
<hr/>		<hr/>	
15		15	
* 84-135 Honors Chemistry and, 84-137 Honors Chemistry Lab.		* 84-136 Honors Chemistry and, 84-138 Honors Chemistry Lab.	
+ 95-147 Honors Physics and, 96-147 Fund. of Experimental Physics I may be substituted.		+ 95-148 Honors Physics and, 96-148 Fund. of Experimental Physics II may be substituted.	

Sophomore Year

Fall Semester		Spring Semester	
24-201 Nuclear Engineering Laboratory	1	24-204 Energy Engineering Laboratory	1
16-211 Fund. of Electricity	3	92-232 Calculus B-IV	4
92-231 Calculus B-III	4	or	
or		92-234 Calculus A-IV	3
92-233 Calculus A-III	3	24-228 Mechanics of Deformable Bodies	4
95-245 Fund. of Physics II	3	24-242 Thermodynamics	3
96-245 Physics II Laboratory	1	24-206 Nuclear Engineering Fundamentals	3
24-205 Mod. Physics for Engineers	3	Area I or II Elective	3
Area I or II Elective	3		
<hr/>		<hr/>	
17-18		17-18	

Junior Year

Fall Semester			Spring Semester		
92-301	Advanced Calculus	3	24-343	Heat Transfer	3
24-301	Reactor Physics	3	24-302	Reactor Physics	3
24-382	Fluid Mechanics	3	24-397	Num. Method in Reactor Design	3
80-305	Nuclear Instrument. II	4	92-302	Advanced Calculus	3
64-201	Economics I	3	64-202	Economics II	3
92-261	Introduction to Computer Programming	2	Area I or II Elective		3
		<hr/> 2			<hr/> 3
		18			18

Senior Year

Fall Semester			Spring Semester		
24-401	Power System Eng. I	3	24-402	Power System Eng. II	3
24-403	Reactor Operations	3	24-404	Power System Design	3
24-416	Introduction to Fusion Syst.	3		Technical Elective	3
	Technical Elective	3		Technical Elective	3
	Undesignated Elective	3		Undesignated Elective	3
		<hr/> 15			<hr/> 15



DEPARTMENT OF PLASTICS ENGINEERING

Nick Schott, Chairperson

Professors: Aldo Crugnola, Rudolf Deanin, Raymond Normandin, Clarence Pope

Associate Professors: Everett Arnold, Stephen Driscoll, Stephen Orroth, Jr., Nick Schott, Amad Tayebi

Plastics engineering is a specialized body of knowledge concerned with the synthesis of polymeric materials and their conversion to useful end products. It is the practical application of principles of mathematics, physics, chemistry, engineering and economics to the field of high polymers.

This program is designed to prepare the graduate for a professional career in the polymer industries (of which plastics is the largest), man made fibers, rubber, coating, and adhesives. The curriculum provides a sound basis in mathematics, chemistry, and engineering, plus a full study of plastic materials, properties, process engineering, and product design, and includes sufficient flexibility for further specialization in areas of individual interest. Undergraduates also have the privilege of joining the first student chapter of the International Society of Plastics Engineers. (SPE)

Since the program started in 1954, more than 600 graduates have been employed by polymer industries throughout the United States, Europe, and Asia. Major plastics producers and users recruit annually on campus. While most job openings are in product and process development or in technical service and marketing, some graduates also go into research, manufacturing, consulting, and teaching. This curriculum is accredited by the Engineers' Council for Professional Development.

COURSES OF STUDY FOR PLASTICS ENGINEERING

Freshman Year

Fall Semester		Spring Semester	
* 84-121 Chemistry	3	* 84-126 Chemistry	3
* 84-123 Chemistry Lab	1	* 84-124 Chemistry Lab	1
42-101 College Writing	3	42-102 College Writing & Literature	3
92-131 Calculus B-I		92-132 Calculus B-II	
or		or	
92-133 Calculus A-I	4	92-134 Calculus A-II	4
+ 95-141 Physics I	3	+ 95-144 Physics II	3
+ 96-141 Fund. of Exp. Physics I	1	+ 96-144 Fund. of Exp. Physics II	1
Physical Education		Physical Education	
	15		15
* 84-135 Honors Chemistry and, 84-137 Honors Chemistry Lab		* 84-136 Honors Chemistry and, 84-138 Honors Chemistry Lab.	
+ 95-147 Honors Physics and, 96-147 Fund. of Experimental Physics I may be substituted.		+ 95-148 Honors Physics and, 96-148 Fund. of Experimental Physics II may be substituted.	

Sophomore Year

Fall Semester

84-223 Organic Chemistry I-B	3
84-225 Organic Chemistry I-B Lab.	1
92-231 Calculus B-III	4
or	
92-233 Calculus A-III	3
92-261 Digital Computer Programming	2
92-215 Analytic Mechanics I	3
26-201 Polymeric Materials I	3
26-215 Plastics Processing Lab. I	1

16 or 17

Spring Semester

84-224 Organic Chemistry II-B	3
84-226 Organic Chemistry II-B Lab.	1
92-234 Differential Equations	3
22-216 Analytic Mechanics II	3
26-202 Polymeric Materials II	3
26-204 Process Control Systems	3
26-216 Plastics Processing Lab. II	1
26-272 Intro. to Plastics Tooling Op.	1

18

Junior Year

Fall Semester

26-347 Elements of Thermodynamics	3
26-395 Materials Science	2
64-201 Economics I	3
26-301 Polymeric Materials III	3
26-315 Plastics Processing Lab. III	1
26-373 Plastics Mold Engineering I	3
Area I or II Elective	3

18

Spring Semester

84-339 Physical Chem. Principles	3
84-341 Physical Chem. Principles Lab.	1
26-316 Plastics Processing Lab. IV	1
16-350 Intro. to Elec. Power/Mach.	3
26-314 Fluid Flow and Rheology of Polymers	3
26-348 Heat Transfer	3
Area I or II Elective	3

17

Senior Year

Fall Semester

85-403 Intro. Phys. Chem. of Macromolecules	3
84-405 Polymer Laboratory I	1
26-401 Plastics Processing Eng. I	3
26-403 Physical Properties of Polymers	3
26-415 Physical Properties Lab. I	1
26-411 Plastics Seminar	1
ROTC or Technical Elective	3
Area I or II Elective	3

18

Spring Semester

84-404 Intro. Org. Chem. of Macromolecules	3
84-406 Polymer Laboratory II	1
26-402 Plastics Processing Eng. II	3
26-406 Polymer Structure	3
26-416 Physical Properties Lab. II	1
26-412 Plastics Seminar	1
ROTC or Technical Elective	3
Area I or II Elective	3

18



FACULTY OF THE COLLEGE OF ENGINEERING

DEAN OF THE COLLEGE

Aldo Crugnola, A.B., M.S., Sc.D., Dean

DEPARTMENT CHAIRPERSONS

John Goodwin, B.T.E., M.S.; Industrial Technology

Norwood H. Keeney, Jr., B.S., M.S., Ph.D., P.E.; Chemical Engineering

John A. McElman, B.S., M.S., Ph.D.; Mechanical Engineering

William B. Moeller, B.S., M.S., Ph.D., P.E.; Civil Engineering

James P. Phelps, B.S., Ph.D.; Nuclear Engineering

James E. Powers, B.S., M.S.; Electrical Engineering

Nick R. Schott, B.S., M.S., Ph.D.; Plastics Engineering

RESIDENT FACULTY

Frank P. Alberti, Jr., Assistant Professor, Mechanical Engineering; B.S.C.E., Tufts University; M.S.C.E., Worcester Polytechnic Institute; M.S.M.E., Northeastern University; Ph.D., University of New Hampshire.

H. Jack Apfelbaum, Associate Professor, Industrial Technology; B.M.E., City College of New York; M.M.E., University of Connecticut; Ed.M., Harvard University; P.E.

Everett S. Arnold, Associate Professor, Plastics Engineering; B.S., Southeastern Massachusetts University; M.S., Lowell Technological Institute.

Francesco L. Bacchialoni, Associate Professor, Electrical Engineering; Dott. Ing., University of Genova (Italy)

Richard V. Barone, Assistant Professor, Industrial Technology; S.B., S.M., Sc.D., Massachusetts Institute of Technology.

Roger H. Baumann, Professor, Electrical Engineering; B.S., M.S., Massachusetts Institute of Technology; Sc.D., University of Paris.

Frederick B. Bischoff, Professor, Mechanical Engineering; B.S., M.S., Lowell Technological Institute; P.E.

Gilbert Brown, Assistant Professor, Nuclear Engineering; B.S., Cornell University; M.S., Ph.D., Massachusetts Institute of Technology.

Ronald D. Brunelle, Associate Professor, Electrical Engineering; B.S., M.S., M.S., Lowell Technological Institute; P.E.

Peter Burger, Associate Professor, Electrical Engineering; B.E., Vanderbilt University; M.S., Ph.D., Stanford University.

Huan-Yang Chang, Associate Professor, Chemical Engineering; B.S., Southwest Associated University (China); M.S., University of Rhode Island; Ph.D., Iowa State University.

Ning H. Chen, Associate Professor, Chemical Engineering; B.S., National Chekiang University (China); B.Ch.E., Polytechnic Institute of Brooklyn; M.S., University of Missouri; D.Ch.E., Polytechnic Institute of Brooklyn.

George P. Cheney, Assistant Professor, Electrical Engineering; B.S., M.S., Lowell Technological Institute.

Anthony J. Cirrito, Assistant Professor, Civil Engineering; B.S., Villanova University; M.S., Lowell Technological Institute; P.E.

Donn A. Clark, Assistant Professor, Electrical Engineering; B.S., Pennsylvania State University; M.S., Northeastern University; P.E.

David Colling, Assistant Professor, Industrial Technology; S.B., S.M., Sc.D., Massachusetts Institute of Technology; P.E.

Aldo M. Crugnola, Professor, Plastics Engineering; A.B., Boston University; M.S., Northeastern University; Sc.D., Massachusetts Institute of Technology.

Rudolph D. Deanin, Professor, Plastics Engineering; A.B., Cornell University; M.S., Ph.D., University of Illinois.

Robert J. Dirkman, Assistant Professor, Electrical Engineering; B.S., Tufts University; S.M., Massachusetts Institute of Technology.

Alfred A. Donatelli, Assistant Professor, Chemical Engineering; B.S., M.S., Lowell Technological Institute; Ph.D., Lehigh University.

Stephen B. Driscoll, Associate Professor, Plastics Engineering; B.S., M.S., Lowell Technological Institute.

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John A. Goodwin, Professor, Industrial Technology; B.T.E., M.S., Lowell Technological Institute.

Bernard C. Harcourt, Associate Professor, Industrial Technology; B.S., Fitchburg State College; M.A., Columbia University; P.E.

William E. Haskell, Jr., Professor, Civil Engineering; B.S., Tufts University; M.S., Northeastern University; Ph.D., University of Massachusetts; P.E.; R.L.S.

Charles J. Higgins, Professor, Chemical Engineering; B.S., Massachusetts Maritime Academy; B.S., Lowell Technological Institute; P.E.

William T. Hogan, Professor, Mechanical Engineering; B.S., Northeastern University; S.M., D.Sc., Massachusetts Institute of Technology; P.E.

Robert Z. Hollenbach, Professor, Mechanical Engineering; S.B., Massachusetts Institute of Technology; M.S., Rensselaer Polytechnic Institute.

F. Ross Holmstrom, Associate Professor, Electrical Engineering; B.S., University of Washington; M.S., Ph.D., Stanford University.

C. Zelman Kamien, Associate Professor, Mechanical Engineering; B.S., M.S., Ph.D., Purdue University.

Norwood H. Keeney, Jr., Professor, Chemical Engineering; B.S., Trinity College, Hartford; M.S., University of Maine; Ph.D., University of Manchester (England); P.E.

Earle R. Laste, Jr., Professor, Electrical Engineering; B.S., M.S., Northeastern University; Ph.D., Worcester Polytechnic Institute.

J. Robert A. Lemieux, Associate Professor, Electrical Engineering; B.S., M.S., Lowell Technological Institute.

Donald C. Leitch, Associate Professor, Civil Engineering; B.S., Lehigh University; M.S., University of Colorado; P.E.

John P. Leonard, Assistant Professor, Electrical Engineering; B.S., Lowell Technological Institute; M.S., Northeastern University.

James A. Mann, Associate Professor, Chemical Engineering; B.S., Rensselaer Polytechnic Institute.

Jose G. Martin, Associate Professor, Nuclear Engineering; A.S., A.S., Institute de La Habana; B.S., Mississippi State University; M.S., Ph.D., University of Wisconsin, Madison.

John A. McElman, Professor, Mechanical Engineering; B.S., M.S., Northeastern University, Ph.D., Virginia Polytechnic Institute.

Robert J. McVicker, Associate Professor, Industrial Technology; Director of Co-op Education; B.S., Pennsylvania State University; B.S., U.S. Naval Post-Graduate School; M.S., Carnegie Institute of Technology.

Kun Min, Associate Professor, Mechanical Engineering & Nuclear Engineering; B.S., Lehigh University; M.S.E., University of Michigan; Ph.D., University of Illinois.

Alan Mironer, Professor, Mechanical Engineering; B.M.E., Rensselaer Polytechnic Institute; M.Eng., Yale University; Ph.D., Syracuse University.

William B. Moeller, Associate Professor, Civil Engineering; B.S., Villanova University; M.S., Ph.D., University of Connecticut; P.E.

Paul J. Murphy, Associate Professor, Electrical Engineering; B.S., M.S., Massachusetts Institute of Technology; P.E.

Ronald P. Murro, Associate Professor, Mechanical Engineering; B.C.E., Cooper Union; M.S., Sc.D., Columbia University.

Eugene E. Niemi, Jr., Associate Professor, Mechanical Engineering; B.S., Boston University; M.S., Worcester Polytechnic Institute; Ph.D., University of Massachusetts; P.E.

Raymond O. Normandin, Professor, Plastics Engineering; A.B., Saint Anselm's College; M.S., Boston College.

John C. O'Callahan, Assistant Professor, Mechanical Engineering; B.S., M.S., Ph.D., Northeastern University; P.E.

Vernon Oliver, Assistant Professor, Mechanical Engineering; B.S., M.S., Lowell Technological Institute; Ph.D., Virginia Polytechnic Institute and State University.

- Stephen A. Orroth, Jr., Associate Professor, Plastics Engineering; B.S., M.S., Lowell Technological Institute.
- Charles R. Ott, Associate Professor, Civil Engineering; B.S., M.S., Ph.D., University of Washington.
- Martin A. Patt, Assistant Professor, Electrical Engineering; B.S., Northeastern University; S.M., Massachusetts Institute of Technology.
- Arthur Petrou, Assistant Professor, Mechanical Engineering; B.S., University of New Hampshire; M.S., Northeastern University; P.E.
- Clarence J. Pope, Professor, Plastics Engineering; B.S., Clemson University; M.S., Lowell Technological Institute.
- James E. Powers, Professor, Electrical Engineering; B.S., M.S., Lowell Technological Institute.
- Kenneth L. Rogers, Professor, Mechanical Engineering; B.S., University of Maine; P.E.
- Frederick A. Rojak, Associate Professor, Electrical Engineering; B.S., Pratt Institute; M.S., Lowell Technological Institute; P.E.
- James H. Rome, Assistant Professor, Electrical Engineering; B.S., M.S., Ph.D., University of Michigan.
- Dominick A. Sama, Associate Professor, Chemical Engineering; S.B.Ch.E., S.M.Ch.E., S.D.Ch.E., Massachusetts Institute of Technology.
- Edward P. Sayre, Assistant Professor, BEE, Manhattan College; M.E.E., New York University; Ph.D., Syracuse University.
- Nick R. Schott, Associate Professor, Plastics Engineering; B.S., University of California, Berkeley; M.S., Ph.D., University of Arizona.
- Burton A. Segal, Assistant Professor, Civil Engineering; B.C.E., Polytechnic Institute of Brooklyn; M.S.E., University of North Carolina; M.P.H., University of North Carolina; Ph.D., New York University.
- Steven Serabian, Professor, Mechanical Engineering; B.S., Rensselaer Polytechnic Institute; M.S., Union College.
- John J. Sewell, Associate Professor, Civil Engineering; S.B., C.E., Massachusetts Institute of Technology.
- Herman J. Shea, Professor, Civil Engineering; S.B., S.M., Massachusetts Institute of Technology; P.E.; R.L.S.
- James R. Sheff, Associate Professor, Nuclear Engineering; B.S., University of Colorado; M.S., Ph.D., University of Washington.
- Karl J. Sladek, Associate Professor, Chemical Engineering; B.S., M.S., Sc.D., Massachusetts Institute of Technology.
- Cetin Soydemir, Associate Professor, Civil Engineering; B.S., rRobert College (Istanbul); M.S., Howard University; Ph.D., Princeton University.
- G. Dudley Shepard, Professor, Mechanical Engineering; B.S., Yale University; M.S., Sc.D., Massachusetts Institute of Technology.
- Stephen J. Spurk, Assistant Professor, Electrical Engineering; B.S., Merrimack College; M.S., University of New Hampshire.
- Gabor S. Szava-Kovats, Assistant Professor, Civil Engineering; B.C.E., Technical University of Budapest; M.Sc., Ohio State University; P.E.; R.L.S.
- Louis C. Tartaglione, Associate Professor, Civil Engineering; B.S., Manhattan College; M.S., University of Connecticut; P.E.
- Amad Tayebi, Associate Professor, Plastics Engineering; B.S., Alexandria University (Egypt); M.S., M.E., Sc.D., Massachusetts Institute of Technology.
- David P. Wade, Associate Professor, Electrical Engineering; B.S.; Lowell Technological Institute; M.S., Northeastern University.
- John W. Walkinshaw, Assistant Professor, Chemical Engineering; B.S., M.S., M.S., Lowell Technological Institute; Ph.D., University of Manchester (England).
- A. David Wunsch, Assistant Professor, Electrical Engineering; B.E.E., Cornell University; S.M., Ph.D., Harvard University.

ADJUNCT FACULTY

J. Arthur Ainsworth, Industrial Technology; B.S., M.S., Fitchburg State College.

Arthur J. Bellemore, Electrical Engineering; B.S., Lowell Technological Institute; M.S., University of Virginia.

John Brenner, Mechanical Engineering; B.S., Loyola University (Los Angeles); M.S., University of Notre Dame.

J. Frederick Burt, Mechanical Engineering; B.T.E., M.S., Lowell Technological Institute.

Edward J. Ellis, Plastics Engineering; B.S., M.S., Ph.D., Lowell Technological Institute.

Raymond S. Kacevich, Electrical Engineering; B.S., University of Hartford; M.S., Yale University.

Ralph Mondano, Plastics Engineering; B.S., Yale University.

Joseph E. O'Brien, Civil Engineering; B.S., Tufts University; M.S., Massachusetts Institute of Technology; Ph.D., Harvard University.

Robert E. O'Neil, Electrical Engineering; B.S., Northeastern University.

James P. Phelps, B.S., University of Maine; Ph.D., Michigan State University.

Edward E. Pilat, Nuclear Engineering; B.S., Cornell University; M.S., Ph.D., Massachusetts Institute of Technology.

Carl A. Stevens, Electrical Engineering; B.S., M.S., Tufts University; Sc.M., Brown University; Ph.D., Boston University; P.E.

Henry E. Thomas, Plastics Engineering; B.T.E., Lowell Technological Institute; P.E.

Armand G. Winfield, Plastics Engineering; B.S., Franklin & Marshall College; F.P.R.I., Plastics & Rubber Institute (London).

Stanley Woolfe, Nuclear Engineering; Sc.B., Brown University; M.S., Tufts University; Ph.D., University of Lowell.

VISITING LECTURERS

Raymond Dunn, Industrial Technology; B.S., Lowell Technological Institute.

Kendrick W. Lentz, Mechanical Engineering; B.S.M.E., M.S.M.E., Massachusetts Institute of Technology; M.B.A., Northeastern University.

Reginald J. Lherault, Plastics Engineering; B.S., Lowell Technological Institute; M.Ed., Lowell State College.

Frances B. Peters, Plastics Engineering; B.S., Lowell Technological Institute; M.S., University of Lowell.

Richard L. Stevens, Civil Engineering; B.S., Northeastern University; J.D., Boston College.



COLLEGE OF HEALTH PROFESSIONS

Gertrude Barker, Dean

The College of Health Professions seeks to provide programs in the health professions which will promote an appreciation for the wide range of health-care needs and an understanding of specific health-care roles. Accordingly, these programs are designed to prepare students to contribute to the solution of the serious inadequacies of our health-care system as a whole as well as to provide specific health care services, and they stress both the development of health-care skills and the acquisition of the theoretical and factual knowledge which are fundamental to continued professional growth. The diversification of programs offered by the College and the common experience provided by the curricula promote a continuity of faculty effort and a diversification of student point of view which is a recognized goal for current education in the health professions. The undergraduate curricula of the College are administered under policies which are consistent with those of the University for professional Bachelor of Science degree programs.

OBJECTIVES OF THE COLLEGE OF HEALTH PROFESSIONS

The College of Health Professions seeks to achieve the following objectives:

1. To prepare professionals in health fields at the baccalaureate and graduate levels;
2. To offer specialized curricula which are solidly based upon the liberal arts and sciences;
3. To discern trends in the delivery of health care for the purpose of forecasting health-care manpower needs;
4. To analyze the dynamics of health-care delivery for the purpose of improving the quality of health services;
5. To provide educational experiences which encourage all students in the several programs of the College to interact with one another and to share knowledge pertinent to the health professions;
6. To provide a flexible curriculum which provides opportunities for students to reevaluate career choices;
7. To provide an educational base for graduate study; and
8. To provide an educational environment which promotes responsibility for continued professional and personal growth.

COLLEGE ORGANIZATION & GOVERNANCE

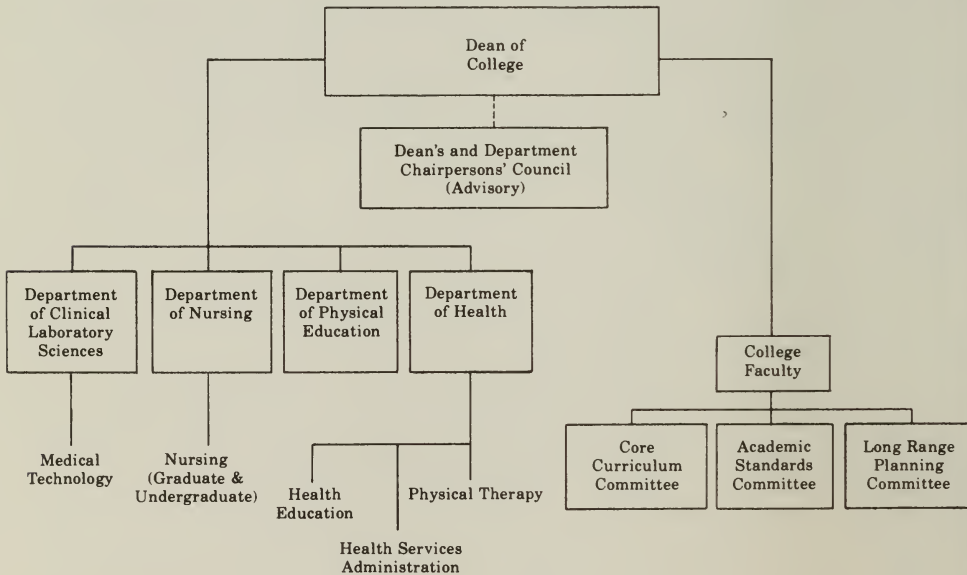
The College of Health Professions is organized into four departments and is administered by a dean who is assisted by an executive committee. Each of the four departments is responsible for developing programs of studies and course offerings. Although the Faculty of the College has overall responsibility for all academic policies of the College, the Academic Standards Committee is responsible for enforcing the academic standards of the College and also serves as a review body for suspended students seeking readmission with probationary status. Each department also has a professional review committee which evaluates appeals from students who have been dropped from their majors because they have not attained the 2.50 average which is required for retention in a major of the College or who have been dropped from the College for non-academic reasons. Such appeals to professional review committees may be submitted only once and all decisions of these committees are final.

Executive Committee

Gertrude Barker, Dean
Ignatius Cizek, Chairperson, Physical Education
Joseph Dorsey, Chairperson, Health
Joseph Farina, Chairperson, Clinical Laboratory Sciences
Eleanor Shalhoup, Chairperson, Nursing

Advisory Councils

Each major in the College of Health Professions has a community advisory council whose membership includes outstanding professionals in the field.



BACCALAUREATE DEGREE PROGRAMS

The College of Health Professions offers undergraduate programs leading to the degree of Bachelor of Science. Degree programs are offered in health education, health services administration, medical technology, nursing, and physical therapy. For information concerning the degree of Master of Science in Gerontological Nursing, see the *Graduate School Catalogue*.

Course requirements for undergraduate programs of the College have been determined by specific professional objectives and are subject to the recommendations of professional associations. Each course of study provides a basic general education in the sciences, the psycho-social areas, and the humanities, a comprehensive introduction to a health profession, and clinical or teaching experiences in one or more community health agencies or schools.

In order to qualify for the Bachelor of Science degree in the College of Health Professions, each student must comply with the University Core Requirements and with the rules and regulations of the College of Health Professions. The University Core Requirements are described elsewhere in this publication under the heading "Academic Policies". The academic policies of the College are enumerated below and in the following sections concerning departments and major programs.

Candidates for degrees in the College of Health Professions may be permitted to elect academic majors in other colleges provided that all curriculum requirements of the College of Health Professions will be satisfied. Election of such additional majors will entail extension of the normal four-year period of undergraduate study for all but the unusual student.

GENERAL COLLEGE REQUIREMENTS

Each candidate for a baccalaureate degree in the College of Health Professions must satisfy the general University requirements for graduation, complete all credits as specified by department curricula, and meet the specific academic requirements of the College of Health Professions as specified in this section.

Retention and Continuance in College Programs

Irrespective of the classification policies of the University, students shall not be admitted to professional courses of the College unless they have satisfactorily completed all courses which are specified by their programs of study for the first three semesters and they have achieved a cumulative grade-point average of 2.50 or better for all such courses. Students enrolled in medical technology, nursing, and physical therapy programs also are required to achieve at this time a cumulative grade-point average of 2.50 or better in their required physical and biological science courses.

To qualify for continued matriculation in programs of the College of Health Professions, all students must maintain on-going cumulative averages of 2.50 or better by achieving the following averages at the end of the second semester of

the sophomore year and at the end of each semester thereafter: (1) a semester average of 2.50 or better, and (2) a semester average of 2.50 or better for professional courses attempted in the major. Students who fail to satisfy these requirements will be dropped from their respective programs. Such students may seek reinstatement to programs by filing a petition with the Professional Review Committee of their department. Students whose petitions for reinstatement are denied may seek transfer to another college of the University if they qualify under University policies as students with satisfactory academic standing. Students who do not qualify for such standing are dismissed from the University at the time they are dropped from the College of Health Professions and are ineligible for readmission as probationary students under University policies.

All students in the College of Health Professions must demonstrate a state of emotional and physical health which will enable them to provide safe, competent practice in their chosen professional field. In special cases, at the request of the Professional Review Committee of the student's major department, an individual may be required to present statements of physical and/or mental health from appropriate physicians or psychiatrists who are fully licensed by the Commonwealth of Massachusetts. On the basis of a review of such statements, the Professional Review Committee may recommend to the chairperson of the student's major department that the individual be denied admission to the major program or that his or her enrollment in this program be terminated.

Additional regulations of the College of Education apply to the health education major. These policies are listed under the heading for health education.

Appeals Procedure for Reinstatement

Any student who has been denied continuance in his or her major, or any student who has been dropped from a major for non-academic reasons concerning emotional and/or physical health, may submit a written petition to the appropriate Professional Review Committee for reevaluation of his or her record for the purpose of reinstatement. This petition must be received no later than one year after dismissal from the major and may be submitted only once. In making recommendation for reinstatement, the Professional Review Committee may lay down requirements which the student must satisfy as a condition of his or her reinstatement. For additional procedures which apply to nursing students, cf. policies which appear under the heading "Department of Nursing: Appeals Procedure."

Academic Advising

An academic advisor will be assigned to all incoming freshmen and transfer students. Prior to each registration period, students should meet with their advisors to discuss their selection of academic programs. Students who fail to avail themselves of this opportunity and who register for incorrect courses may find it necessary to extend their period of academic study. All seniors should consult with their advisors prior to the established University deadline for filing

programs of study with the Office of the Dean, College of Health Professions. The program of study summarizes a senior's status with respect to requirements for courses and grade-point averages and insures that all stated graduation requirements have been satisfied prior to the formal approval of degree candidates by the Faculty.

Declaration of Program and Change of Program

Students entering the College of Health Professions are advised to declare their major fields at the time of freshman admission. Students who are interested in areas of the health professions but are unsure of their choices of specific majors may be admitted to the College as undeclared students. Subsequent selection of majors by such undeclared students may be limited to health education and health services administration if there are no openings available in medical technology, nursing, or physical therapy programs.

All students are required to make a declaration of major by the end of the sophomore year. Consequently, no student may retain the status of undeclared student later than the semester in which he or she has earned 60 credits. Whenever a student makes a declaration of major, he or she is required to file an official notification with the Office of the Registrar.

Students who wish to change their professional program within the College of Health Professions must secure the approval of the chairperson of the appropriate department having jurisdiction over the major which is desired. Students who wish to drop their health professions program and to add a major which is offered by another college of the University must apply for intercollegiate transfer. All changes of program require notification of the Office of the Registrar through the filing of the form for declaration of major or change of major.

Additional course work beyond the minimum degree requirements and extension of the normal four-year period of study may be expected for students who change their programs within the College of Health Professions after the first semester of the sophomore year. Qualified students may transfer into degree programs of the College of Health Professions from other colleges of the University. However, students making such transfer may expect to extend their period of study beyond the normal four-year period, particularly if they transfer after the first semester of the sophomore year.

Transfer Policies

Students transferring to the College of Health Professions from other colleges of the University or from other institutions may expect recognition of previously completed courses if these are equivalent to those which are specified by curricula of the College. Irrespective of any previous recognition by the Office of Admissions or by other colleges of the University, a student who transfers from another college of the University to the College of Health Professions may not have courses which are prerequisites for admission to programs of the College credited to the minimum requirements for degrees in the health professions.

Students who contemplate transferring to health professions majors of the College are advised that admission to the College is competitive and requires, as a minimum, the achievement of a cumulative grade-point average of 2.50 on a 4 point scale for all previous course work attempted. In addition, applicants for medical technology, nursing, and physical therapy programs are also required to have achieved a minimum average of 2.50 in their physical and biological science courses.

Transfer from Other Institutions

Courses which are transferred from other institutions are initially evaluated by the Office of Admissions in terms of general University requirements when a student is admitted to the University and are also evaluated by professional departments in terms of college and program requirements at the time a student is accepted for matriculation in the College of Health Professions. Courses which are transferred to the University under provisions of the Massachusetts Transfer Compact and which are not creditable to requirements of the College of Health Professions or as unrestricted elective courses will be listed on the student's permanent record card but will not apply to the minimum degree requirements. In the event that a student who has transferred to the University under the Massachusetts Transfer Compact subsequently make an intercollegiate transfer to the College of Health Professions, all previously completed courses, including transferred courses from the compact institution, will be reevaluated in terms of their applicability to degree requirements of the College of Health Professions.

The applicability of grades received in transferred courses for the determination of the grade-point average of the student's major at the University of Lowell is determined by policies of each of the colleges. The policy of the College of Health Professions is to count such grades for the purpose of determining the student's grade-point average in his or her professional major.

Repetition of Transferred Courses

A student who has been granted transfer credit, and on this basis has been assigned to advanced courses for which the transferred course is a prerequisite, may be advised to repeat such transferred work at the University or to take a more elementary course than that which has been transferred with the competence of the student has been demonstrably inadequate. Permission to repeat a transferred course is granted by filing an academic petition form through the office of the College dean. Since credit may not be granted more than once for the completion of any course, a condition for filing such a petition is the simultaneous filing of a request to revoke recognition of the previously transferred course.

Intercollegiate Transfer to the College of Health Professions

Students wishing to transfer from another college of the University, or from baccalaureate continuing-education programs of the Evening School, must file a petition, together with a transcript of their permanent record cards, with the

appropriate chairperson and the Dean of the College of Health Professions by November 1 for spring semester transfer and by April 1 for fall semester transfer. Students are referred to University policies concerning intercollegiate transfer which appear elsewhere in this publication under the heading "Academic Policies: Change of Major with Intercollegiate Transfer" for further procedural details. Records of students who are approved for transfer are reviewed by the Office of the Dean and, irrespective of grades previously received in other college programs, all courses which may not be applied to college or program requirements are deleted from the student's cumulative grade-point average.

Special College Requirements

In addition to the accident insurance coverage of the University, each student in the professional medical technology, nursing, and physical therapy programs must demonstrate proof of purchase of professional liability insurance at the beginning of their clinical experience. For nursing students, this will be at the beginning of the sophomore year. For medical technology and physical therapy students, this will be at the beginning of their junior year. Students are billed for this insurance by the business office, but in case of error or omission, students are advised that they must assume responsibility for their personal coverage. The professional liability insurance is in the amount of \$1,000,000/\$1,000,000 aggregate.

In order to participate in the clinical portion of the upper-division curriculum, each medical technology, nursing, and physical therapy student is required to wear an official uniform, which may be purchased at the South Campus bookstore. Details concerning specific uniform requirements may be secured from the appropriate department chairperson.

All students are responsible for providing their own transportation to clinical placements. Car pools are often arranged among students and individuals who do not own automobiles usually can arrange to participate in such a pool.

Each student in the College of Health Professions must provide evidence that he or she is free of tuberculosis by presenting a skin test or x-ray report before enrolling in any clinical or apprentice teaching course. In addition, nursing and physical therapy majors must present a report of a complete physical examination before senior clinical experiences are scheduled. These reports are to be submitted to the University Health Office. Consult department chairpersons for additional details.

DEPARTMENT OF CLINICAL LABORATORY SCIENCES

Joseph Farina, Chairperson

Professor: Joseph Farina

Associate Professor: Jacob Lam

Assistant Professors: Alease Bruce, Sandra Fessia, Michael Frechette, Theodore Namm, Michael Shook

Instructors: Jo-Martha Glushko, Jeffrey Kushner

The Department of Clinical Laboratory Sciences offers a major program in medical technology which leads to the degree of Bachelor of Science.

Medical Technology Major

In partnership with area hospitals (Lowell General Hospital, St. John's Hospital, and St. Joseph's Hospital), the Department of Clinical Laboratory Sciences has developed an integrated program for medical technology education. The major thrust of the program is the consolidation of the didactic and laboratory portions of the traditional clinical internship to on-campus simulated clinical laboratory settings. The didactic, laboratory and practicum experiences are arranged over a two-year period and are integrated. The program also provides for upward mobility of current practitioners in the field including associate degree graduates with MLT(ASCP) or CLA(ASCP) certification. The curriculum combines the education and training of the generalist with the opportunity to satisfy supervisory, educational or research oriented interests. The program is seeking accreditation by the American Medical Association's Committee on Allied Health Education and Accreditation, and has provisional accreditation from the National Accrediting Agency for Clinical Laboratory Sciences (1978). Graduates of the medical technology program are eligible to take the Medical Technologist's Registry Exam of the American Society of Clinical Pathologists (MT-ASCP).

Transfer, Retention, and Continuance in Medical Technology

Formal application is suggested for admission and/or retention in the professional curriculum. Applications should be submitted prior to the beginning of the second semester of the sophomore year to the Professional Review Committee of the Department of Clinical Laboratory Sciences.* The Application forms are available from the office of the Chairman.

Students seeking admission to or continuation in the major must have achieved a cumulative grade point average of 2.50 in all courses as well as a grade point average of 2.50 in the clinical laboratory science courses. Students transferring and students with MLT (ASCP) certification may challenge courses by taking departmental equivalency examinations or any of the appropriate examinations of the College Level Examination Program. A minimum grade of "BC" in departmental course equivalency examinations is required for credit.

*The Professional Review Committee includes the program director, medical director, a pathologist and educational coordinator from each of the clinical affiliates, an educational coordinator from the University, and a faculty member of the Department.

Students not meeting these requirements will not be accepted into the professional phase of the medical technology major. They may, however, file a petition of appeal to the Professional Review Committee of the Department of Clinical Laboratory Sciences for reconsideration. On the basis of this review, the Professional Review Committee may recommend to the Chairperson of the Department that the individual be admitted on either full or conditional status, or that the student's enrollment in the program be terminated.

COURSE OF STUDY FOR MEDICAL TECHNOLOGY (Class of 1979)

Freshman Year					
Fall Semester			Spring Semester		
30-101	Introduction to Health Professions	2	35-102	Anatomy & Physiology II	3
35-101	Anatomy & Physiology I	3	35-104	Anatomy & Physiology Lab II	1
35-103	Anatomy & Physiology Lab I	1	39-102	Physical Education	1
39-101	Physical Education	1	42-102	College Writing & Literature	3
42-101	College Writing	3	48-101	Introduction to Sociology	3
47-101	General Psychology	3		Humanities Elective (Area II)	3
92-206	Elementary Statistical Analysis	3			
		16			14

<i>Sophomore Year</i>					
Fall Semester			Spring Semester		
30-201	Community Health	3	35-252	Physiologic Sciences II	3
35-211	Basic Clinical Microbiology & Pathology	3	35-254	Physiologic Sciences Lab II	1
35-213	Basic Clinical Microbiology & Pathology Lab	1	36-241	Basic Lab Skills	2
35-251	Physiologic Sciences I	3	36-243	Basic Lab Skills Lab	2
35-253	Physiologic Sciences Lab I	1	92-117	Introduction to Calculus (or equivalent)	3
42-	Literature Elective	3		Electives (Areas I & II)	6
92-209	Introduction to Theory of Computer Programming	3			
		<hr/> 17	<hr/> 17		

Junior Year					
Fall Semester			Spring Semester		
36-321	Hematology	3	36-311	Clinical Microbiology	3
36-323	Hematology Lab	2	36-313	Clinical Microbiology Lab	2
36-341	Fundamentals of Clinical Chemistry	3	36-350	Human Biochemistry	3
36-343	Fundamentals of Clinical Chemistry Lab	2	36-351	Clinical Biochemistry I	3
36-361	Medical Instrumentation	3	36-353	Clinical Biochemistry Lab I	2
36-363	Medical Instrumentation Lab	2	36-420	Clinical Hematology Practicum	2
		15			15

Senior Year					
Fall Semester			Spring Semester		
35-335	Medical & Clinical Genetics	3	36-411	Advanced Medical Microbiology	3
35-337	Medical & Clinical Genetics Lab.	1	36-413	Advanced Medical Microbiology Lab.	1
36-331	Immunology-Immunohematology	3	36-430	Clinical Immunohematology	
36-333	Immunology-Immunohematology			Practicum	
	Lab	2	36-450	Clinical Biochemistry Practicum	4
36-410	Clinical Microbiology		36-453	Professional Aspects of Medical	
	Practicum	2		Technology	3
36-452	Clinical Biochemistry II	3	36-473	Medical Technology Seminar	3
36-454	Clinical Biochemistry Lab II	2			
36-461	Automation	2			
		<hr/>			<hr/>
		18			14

COURSE OF STUDY FOR MEDICAL TECHNOLOGY (Class of 1980)

Freshman Year

Fall Semester			Spring Semester		
30-101	Introduction to Health Professions	2	35-102	Anatomy & Physiology II	3
35-101	Anatomy & Physiology I	3	35-104	Anatomy & Physiology Lab II	1
35-103	Anatomy & Physiology Lab I	1	39-102	Physical Education	1
39-101	Physical Education	1	42-102	College Writing & Literature	3
42-101	College Writing	3	48-101	Introduction to Sociology	3
47-101	General Psychology	3		Humanities Elective (Area II)	3
92-206	Elementary Statistical Analysis	3			
		16			14

Sophomore Year

Fall Semester			Spring Semester		
30-201	Community Health	3	35-252	Physiologic Sciences II	3
35-211	Basic Clinical Microbiology & Pathology	3	35-254	Physiologic Sciences Lab II	1
35-213	Basic Clinical Microbiology & Pathology Lab	1	36-241	Basic Lab Skills	2
35-251	Physiologic Sciences I	3	36-243	Basic Lab Skills Lab	2
35-253	Physiologic Sciences Lab I	1	92-117	Introduction to Calculus (or equivalent)	3
42-	Literature Elective	3		Electives (Areas I & II)	6
92-209	Introduction to Computer Programming	3			
		<hr/> 17			<hr/> 17

Junior Year

Fall Semester			Spring Semester		
36-321	Hematology	3	36-311	Clinical Microbiology	3
36-323	Hematology Lab	2	36-313	Clinical Microbiology Lab	2
36-341	Fundamentals of Clinical Chemistry	3	36-350	Human Biochemistry	3
36-343	Fundamentals of Clinical Chemistry Lab	2	36-351	Clinical Biochemistry I	3
36-361	Medical Instrumentation	3	36-353	Clinical Biochemistry I Lab	2
36-363	Medical Instrumentation Lab	2	36-420	Clinical Hematology Practicum	2
		<hr/> 15			<hr/> 15

Senior Year

Fall Semester			Spring Semester		
35-335	Medical & Clinical Genetics	3	36-411	Advanced Medical Microbiology	3
35-337	Medical & Clinical Genetics Lab	1	36-413	Advanced Medical Microbiology Lab	1
36-331	Immunology-Immunohematology	3	36-430	Clinical Immunohematology	
36-333	Immunology-Immunohematology Lab			Practicum	2
		2	36-453	Professional Aspects of Medical Technology	3
36-410	Clinical Microbiology Practicum	2			
36-452	Clinical Biochemistry II	3	36-473	Medical Technology Seminar	3
36-454	Clinical Biochemistry II Lab	2	36-450	Clinical Biochemistry Practicum	2
		<hr/> 16			<hr/> 14

COURSE OF STUDY FOR MEDICAL TECHNOLOGY (Class of 1981 and following)

Freshman Year

Fall Semester		Spring Semester	
30-101 Introduction to Health Professions	2	35-102 Anatomy & Physiology II	3
35-101 Anatomy & Physiology I	3	35-104 Anatomy & Physiology Lab II	1
35-103 Anatomy & Physiology Lab I	1	35-273 Introduction to Medical Technology	2
39-101 Physical Education	1	39-102 Physical Education	1
42-101 College Writing	3	42-102 College Writing & Literature	3
47-101 General Psychology	3	48-101 Introduction to Sociology	3
92-206 Elementary Statistical Analysis	3	Humanities Elective (Area II)	3
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16		16	

Sophomore Year

Fall Semester		Spring Semester	
30-201 Community Health	3	35-252 Physiologic Sciences II	3
35-211 Basic Clinical Microbiology & Pathology	3	35-254 Physiologic Sciences Lab II	1
35-213 Basic Clinical Microbiology & Pathology Lab	1	36-241 Basic Lab Skills	2
35-251 Physiologic Sciences I	3	36-243 Basic Lab Skills Lab	2
35-253 Physiologic Sciences Lab I	1	36-341 Fundamentals of Clinical Chemistry	3
42- Literature Elective	3	36-343 Fundamentals of Clinical Chemistry Lab	2
92-209 Introduction to Computer Programming	3	92-117 Introduction to Calculus (or equivalent)	3
<hr/>		Elective (Area I or II)	3
17		<hr/>	
		19	

Junior Year

Fall Semester		Spring Semester	
35-335 Medical & Clinical Genetics	3	36-311 Medical Microbiology	3
35-337 Medical & Clinical Genetics Lab	1	36-313 Medical Microbiology Lab	2
36-321 Hematology	3	36-331 Immunology	3
36-323 Hematology Lab	2	36-351 Clinical Biochemistry I	3
36-350 Human Biochemistry	3	36-353 Clinical Biochemistry Lab I	2
36-361 Medical Instrumentation	3	36-420 Clinical Hematology Practicum	2
36-363 Medical Instrumentation Lab	2	<hr/>	
<hr/>		15	
17			

Senior Year

Fall Semester		Spring Semester	
36-410 Clinical Microbiology Practicum	2	36-430 Clinical Immunohematology Practicum	2
36-411 Advanced Medical Microbiology	3	36-450 Clinical Biochemistry Practicum	2
36-413 Advanced Medical Microbiology Lab	1	36-453 Professional Aspects of Medical Technology	3
36-431 Immunohematology	3	36-473 Medical Technology Seminar	3
36-433 Immunohematology Lab	2	Elective (UCR)	3
36-452 Clinical Biochemistry II	3	<hr/>	
36-454 Clinical Biochemistry Lab II	2	13	
<hr/>			
16			

DEPARTMENT OF HEALTH

Joseph A. Dorsey, Chairperson

Professors: Joseph A. Dorsey, Mona C. Hull

Assistant Professors: Albert D. Boulanger, Karen Lorentzen, Robert Neal

The Department of Health offers major programs in health education, health services administration, and physical therapy which lead to the degree of Bachelor of Science.

Health Education Major

The health education major is a dual program which encompasses both community and secondary school health education and prepares graduates to establish and teach health programs in the public schools and such community agencies as public health departments, hospitals, industry, college health services, and health maintenance organizations. Students pursuing teaching careers in health must apply to the Department Chairperson at the end of the sophomore year for continuation in the health-education program. Such approval is granted in accordance with the regulations governing teacher-education programs which are cited below:

Application for Continuation in Health Education

1. The semester deadlines for filing an application for continuation in the Health Education program are April 1 and November 1.
2. Students are strongly advised to plan their programs of study so that they may file an application for continuation during the semester in which they will complete the sophomore year or four semesters of full-time study.
3. Students must file an application no later than the semester in which they will complete five semesters of full-time study. Special permission of the Dean of the College of Health Professions is required for an extension of this deadline. Students who transfer to the College with 60 or more semester credits should consult the Dean of the College of Health Professions concerning the time limit for filing an application.
4. Continuation in the program of health education requires, at a minimum, the achievement of a grade-point average of 2.50 for all required courses in education, together with a grade of "C" or better in each education course, and the achievement of grade-point averages of 2.50 in the major and in the total degree program, including transferred course work credited to the health-education curriculum.
5. Application forms for continuance in the health-education program of the College of Health Professions must be secured from and filed with the Chairperson of the Department of Health.

Notification of Continuation in Health Education

Applicants for continuance in the health-education program will be notified in writing if their petitions have been rejected. Students who applied by the April 1 deadline will be notified by July 1. Those who applied by November 1 will be notified prior to the beginning of the spring semester.

Grading System

All courses in apprentice teaching are graded on the "S" or "U" basis. A grade of "S" in apprentice teaching courses indicates that a student's performance in

teaching merits an evaluation of "C" or better. Supportive evidence of each student's performance in teaching is provided in his or her placement file and is made available to prospective employers. Course credits granted to students for courses to which a grade of "S" has been assigned are not computed in cumulative averages. Students who earn grades of "U" in apprentice teaching are automatically terminated in the health-education program. A grade of "U" entered on the student's permanent record card indicates that attempted course credits have not been granted. This grade does not prejudice the student's academic standing in the University since such credits are not counted toward the cumulative grade-point average.

COURSE OF STUDY FOR HEALTH EDUCATION (Class of 1980 and following)

Freshman Year

Fall Semester			Spring Semester		
30-101	Intro. to Health Prof.	2	30-201	Community Health	3
35-101	Anatomy & Physio. I	3	35-102	Anatomy & Physio. II	3
35-103	Anatomy & Physio. Lab I	1	35-104	Anatomy & Physio. Lab II	1
39-	Physical Education	1		Elective	3
42-101	College Writing	3		Elective (Area II)	
47-	Psychology Elective	3	39-	Physical Education	1
48-	Sociology Elective	3	42-102	College Writing & Lit.	3
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16			17		

Sophomore Year

Fall Semester			Spring Semester		
30-301	Contemp. Health Prob.	3	30-306	Intro. to Gerontology	3
35-211	Basic Clin. Microbiology		31-202	Intro. to Health Education	3
	& Pathology	3	35-252	Physiological Sciences II	3
35-213	Basic Clinical Micro.		35-254	Physio. Sciences Lab II	1
	& Pathology Lab	1	47-163	The Human Lifespan	3
35-251	Physiologic Science I	3	82-351	Human Sexuality	3
35-253	Physiologic Science Lab I	1			
	Elective (Area II)	3			
92-383	Intro. to Statistics	3			
		<hr/> 17			<hr/> 16

Junior Year

Fall Semester			Spring Semester		
01-391	Philosophy of Education or 01-392 Philosophical and Moral Issues in Ed.	3	01-371	Educational Psychology	3
30-303	Nutrition and Physical Fitness	3	01-381	Sociology of Education or 01-327 Ed. and Social Inequality or 01-328 Social Organ. of Schools & School Systems	3
31-301	Environ. and Consumer Health	3	31-304	Drug, Alcohol and Smoking Education	3
47-328	Dynamics of Interper. Relations	3	31-306	Curriculum and Methods of Teaching Health Education	3
	Literature Elective (Area II)	3		Elective	3
		<hr/> 15			<hr/> 15

Senior Year

Fall Semester			Spring Semester		
30-302	First Aid and Safety	3	31-404	Apprentice Teaching of Health: Secondary Schools	12
31-401	Mental Health Ed. and Health Counseling	3			
31-403	Commun. Health Ed. Pract.	3			
	Health Related Elective	3			
	Elective	3			
		<hr/> 15			<hr/> 12

Health Services Administration Major

The major in health services administration is offered in cooperation with the College of Management Science and prepares graduates to function in middle management roles in hospitals or in primary management roles in nursing homes, health planning agencies, public health agencies, health maintenance organizations, visiting nurse associations, and other community health agencies. Students who are interested in qualifying for Massachusetts licensure for Nursing Home Administration should consult the Department Chairperson prior to the end of their junior year as an extra internship may be required.

COURSE OF STUDY FOR HEALTH SERVICES ADMINISTRATION

(Class of 1980 and following)

Freshman Year

Fall Semester		Spring Semester	
30-101 Intro. to Health Profess.	2	30-201 Community Health	3
35-101 Anatomy & Physiology I	3	35-102 Anatomy & Physiology II	3
35-103 Anatomy & Physiology Lab	1	35-104 Anatomy & Physiology Lab II	1
39- Physical Education	1	39- Physical Education	1
42-101 College Writing	3	42-102 Coll. Writing & Lit.	3
47- Psychology Elective	3	Elective (Area II)	3
48- Sociology Elective	3	Elective (UCR)	3
	16		17

Sophomore Year

Fall Semester		Spring Semester	
30-301 Contemp. Health Problems	3	30-306 Intro. to Gerontology	3
35-211 Basic Clinical Micro. & Pathology	3	35-252 Physiologic Science II	3
35-213 Basic Clinical Micro. & Pathology Lab	1	35-254 Physiologic Science Lab II	1
35-251 Physiologic Science I	3	54-103 Conversational Spanish Health Profession	3
35-253 Physiologic Science Lab I	1	66-200 Business Systems	3
Elective (UCR)	3	92-209 Intro. Theory. Comp.	3
Elective	3		
	17		16

Junior Year

Fall Semester		Spring Semester	
32-311 Long Term Care I	3	32-312 Long Term Care II	3
48-351 Sociology of Health	3	32-315 Futuristics/Health Planning & Research	3
60-201 Accounting Prin. I	3	47-328 Dynamics of Interpersonal Relations	3
64-202 Economics II	3	60- Health Systems Accounting	3
64-211 Statistics for Business & Economics I	3	60-362 Business Law I	3
84-252 Elective (Area III)	3	Elective	3
	18		18

Senior Year

Fall Semester		Spring Semester	
32-409 Administrative Intern. I	6	32-410 Administrative Intern. II	6
32-411 Health Law & Regulations	3	32-418 Advanced Seminar in Health Services Admin. II	3
32-415 Seminar in Health Services Admin. I	3	32-422 Health Planning & Policy	3
32-417 Trends in Mental Health	3	32-454 Program Development, Management & Evaluation	3
	15		15

Physical Therapy Major

The physical therapist works with medical personnel and community health organizations in contributing to programs of patient care and management, the general aims of which are the prevention and alleviation of bodily dysfunction or deformity. The therapist may serve in hospitals, industry, community health agencies, rehabilitation centers, or may maintain a private practice. Individuals who are interested in scientific and medical fields, and who enjoy working closely with people of all ages, will find physical therapy a career which is rewarding and fulfilling.

Physical therapy students take the same common program of sciences and general education as other students who pursue majors in the Department of Health. This core provides the liberal and scientific base for professional courses in physical therapy, which are offered in the junior and senior years. Clinical affiliations are integrated throughout the upper-division physical therapy courses (summer of the junior year and fall of the senior year) and a full-time clinical affiliation is scheduled during the spring semester of the senior year.

Physical therapy students are responsible for transportation to and from affiliations and to specialized courses at the University of Massachusetts Medical School at Worcester. At the beginning of their affiliations, students are required to have purchased uniforms consisting of blue trousers, white tunic with appropriate insignia and white or black hospital shoes. These uniforms are available for purchase at the South Campus bookstore.



COURSE OF STUDY FOR PHYSICAL THERAPY

Freshman Year

Fall Semester			Spring Semester		
30-201	Community Health	3	30-101	Intro. to Health Prof.	2
35-101	Anatomy & Physiology I	3	35-102	Anat. & Physiology II	3
35-103	Anatomy & Physiology Lab I	1	35-104	Anat. & Physiology Lab II	1
39-	Physical Education	1		Humanities Elective	3
42-101	College Writing	3	39-	Physical Education	1
47-	Psychology Elective	3	42-102	College Writing & Lit.	3
48-	Sociology Elective	3	92-209	Intro. Theory. Comp. Prog.	3
		<hr/> 17			<hr/> 16

Sophomore Year

Fall Semester			Spring Semester		
35-211	Basic Clinical Micro. & Pathology	3	30-301	Contemp. Health Prob.	3
35-213	Basic Clinical Micro. & Pathology			Elective	3
	Lab	1	34-200	Intro. to Phys. Therapy	2
35-251	Physiologic Sci. I	3	35-252	Physiologic Sci. II	3
35-253	Physiologic Sci. Lab I	1	35-254	Physiologic Sci. Lab II	1
95-103	Gen. Physics I	3	95-104	General Physics II	3
96-103	Gen. Exp. Physics I	1	96-104	Gen. Exp. Physics II	1
	Literature Elective	3			
	Elective	3			
		<hr/> 18			<hr/> 16

Junior Year

Fall Semester			Spring Semester		
34-301	Advanced Anatomy*	4	30-306	Intro. to Gerontology	3
34-303	Exercise Physiology	3	34-302	Functional Neuronanat.*	4
34-305	P.T. Prin. & Practice I	2	34-306	P.T. Prin. & Practice II	3
34-307	Med. Surg. Conditions I*	3	34-308	Med. Surg. Cond. II*	3
47-	Psychology Applies to the		35-356	Pharmacology	3
	Handicapped	3	47-328	Dynamics of Interper-	
	Elective	3		sonal Relations	3
		<hr/> 18			<hr/> 19

Summer

34-309 Kinesiology	3	34-312 P.T. Prin. & Pract. II	3
34-311 Orthotics & Prosthetics	3	34-314 Clinical Affiliation	1
	<hr/> 6		<hr/> 4

Senior Year

Fall Semester			Spring Semester		
34-401	Current Trends in P.T.	3	34-418	Clinical Affiliation III	
34-403	P.T. Prin. & Practice IV	3		(Full work week)	12
34-405	Organization & Admin. of Physical Therapy	3			
34-417	Clinical Affiliation II	3			
92-383	Intro. to Statistics	3			
		<hr/> 15			<hr/> 12

*Courses taken at University of Mass. Medical School in Worcester.

DEPARTMENT OF NURSING

Eleanor Shalhoup, Chairperson

Professors: Gertrude Barker, May Futrell

Associate Professor: Eleanor Shalhoup

Assistant Professors: Marian Dubrule, Joan Lewis, Norma McQuaid, Janice Stecchi

Instructors: Bernice Allen, Sylvia Hallsworth, Linda Liga, Arlene McGrory, Sarah Moroney, Mary

Jo Sagaties, Susanne Uzdavinis, Constance Wall-Hass, Sheryd Waltman, Martha Zier

The Department of Nursing offers a major in nursing leading to the degree of Bachelor of Science and, in cooperation with other departments, a minor area of study in gerontology.

Nursing Major

The nursing program prepares a professional nurse who is a competent, beginning practitioner and who has a foundation for graduate study. The goal of the undergraduate program in nursing at the University of Lowell is to prepare professional nurses who have the ability to think logically, to utilize knowledge of relevant theories, and to apply the nursing process with individuals and groups.

Graduates of the nursing program are prepared to function in a variety of settings, such as hospitals, visiting nurse associations, and nursing homes, and they are eligible to sit for the Board of Registration in Nursing examination for licensure as a Registered Nurse.

Approval and Accreditation

The nursing program is approved by the Massachusetts Board of Registration in Nursing and is fully accredited by the National League for Nursing.

Characteristics of the Baccalaureate Graduate

Upon successful completion of the University of Lowell undergraduate program in nursing, the graduate is prepared as a generalist for beginning professional nursing roles. Specifically, the Faculty believe that the graduate is prepared to:

1. Demonstrate, through relationships with others, recognition of intrinsic worth, responsibilities, and rights of self and others;
2. Establish, maintain, and terminate therapeutic relationships with individuals and groups;
3. Utilize the nursing process to make critical judgments when caring for people of all ages in any setting;
4. Integrate relevant principles and theories from the behavioral sciences, natural sciences, and the humanities into the practice of professional nursing;
5. Contribute to the optimal health of individuals, families, and groups by providing safe, competent, professional nursing care independently and in collaboration with others;
6. Integrate teaching-learning concepts into nursing practice to promote health;

7. Assume leadership responsibilities to effect change for the improvement of nursing care;
8. Appreciate the historical perspective of the profession of nursing and the relationship to contemporary and future nurse roles;
9. Contribute to the expanding body of nursing knowledge through application of research findings and/or the participation in research;
10. Accept responsibility for continuous growth as a person, a professional practitioner, and a contributing citizen in society.

Clinical Laboratory Placements

Major courses in nursing are offered within the Department of Nursing and are under the direct control and supervision of the faculty of nursing. The clinical aspects of the nursing program are developed, coordinated and supervised by the nursing faculty and are provided in collaboration with members of the following community agencies: ABC Nursery School, Bon Secours Hospital, D'Youville Manor, Fairhaven Nursing Home, Lawrence General Hospital Home Health Services Department, Lawrence General Hospital, Lawrence Day Treatment Center for Adults, Lawrence Mental Health Center, Inc., Lawrence Rehabilitation Center, Living and Learning Schools, Inc., Lowell Day Nursery Association, Inc., Lowell General Hospital, Lowell Housing Authority, Lowell Visiting Nurse Association, Nashoba Community Hospital, Solomon Mental Health Center, St. John's Hospital, St. Joseph's Hospital, Tewksbury Hospital, Varnum Manor Nursing Home, and Veteran's Administration Hospital — Bedford.

Required Uniforms

In order to participate in the clinical portion of the upper-division curriculum, each nursing student is required to purchase an official uniform, insignia, appropriate shoes, a name pin, bandage scissors, and a watch with a second hand. Female nursing students also must purchase a cap and either a blue pin-stripe laboratory coat or a navy-blue pants suit for community learning experiences. Male nursing students also must purchase for the community learning experience a blue shirt and blue pants. R.N. students have the option of wearing the University of Lowell student uniform and cap or their own uniform and cap. In any case, the R.N. must wear the University of Lowell student insignia and name pin. Uniform, cap, name pin, and insignia can be purchased at the South Campus bookstore.

Transfer Policies for Registered Nurses

Registered nurses who are graduates of diploma and associate degree nursing programs may be admitted to the nursing program and may be awarded advanced standing through a combination of transcript evaluation and course equivalency procedures. Students who may be interested in applying for credit through course equivalency procedures are referred to policies which appear elsewhere in this publication under the heading "Admission Policies: Advanced Placement with Course Credit."

R.N. students may challenge department designated nursing courses by taking course examinations of the Department of Nursing. A grade of "BC" must be obtained in departmental equivalency examinations for equivalency credit to be recommended by the nursing faculty. Students who may be interested in applying for credit through this means are referred to policies which appear elsewhere in this publication under the heading "Academic Policies: Course Equivalency Examinations" and are advised to confer directly with the Department Chairperson.

The credentials of each R.N. applicant for credit will be considered individually on their own merits, but in no case may a student reduce the basic residency requirements of the University through any combination of transfer, advanced placement with credit, or course equivalency procedures. Students are referred to policies which appear elsewhere in this publication under the heading "Academic Policies: General Degree Requirements" for a discussion of residency requirements of the University.

For retention in the nursing program, the R.N. student must satisfy the same requirements as are met by declared nursing majors.

Retention and Withdrawal Policies for Nursing Majors

To qualify for continued matriculation in the nursing program, all students must pass each nursing course and must maintain ongoing cumulative averages of 2.50 or better by achieving the following averages at the end of the second semester of the sophomore year and at the end of each semester thereafter: (1) a semester average of 2.50 or better and (2) a semester average of 2.50 or better for professional courses attempted in the major. Students who fail to satisfy these requirements will be dropped from the nursing program.

The clinical portions of nursing courses are graded on a "S" (satisfactory) or "U" (unsatisfactory) basis. A grade of "S" indicates that a student has satisfactorily completed the course objectives for the clinical experience. Irrespective of his or her individual achievement in non-clinical course components, a student who receives an unsatisfactory clinical evaluation in a nursing course shall receive a final course grade of "F" (failure) and his or her enrollment in the nursing program shall be terminated immediately.

Students who wish to withdraw from any nursing course are advised that such withdrawal requires simultaneous withdrawal from all nursing courses and termination of enrollment in the nursing program. Such students who wish to apply for readmission to the nursing program as members of subsequent graduation classes are advised that consideration for readmission is determined not only by academic eligibility requirements in effect for the class to which admission is sought but also by enrollment quotas. Accordingly, students are advised to confer with the Chairperson of the Department of Nursing prior to applying for readmission in order to ascertain if program vacancies exist.

Appeal of Termination

Students who have been notified of their termination in the nursing program may seek reinstatement by filing a petition with the Professional Review Committee of the Nursing Department, the members of which will forward a common recommendation to the Faculty of Nursing. After reviewing the student's petition and the recommendation of the Committee, the Faculty will vote to reject or accept the request for reinstatement and will forward to the Department Chairperson its recommendation together with a statement of requirements which a reinstated student must satisfy as a special condition of his or her reinstatement and continued matriculation. A student who has been dropped from the nursing program after having been reinstated may not petition again for reinstatement.

Philosophy of the Department of Nursing

The faculty of the Department of Nursing believes that Man is a unique rational being who has needs for safety and security, love and belonging, esteem and self-actualization, and who interacts purposefully in a changing environment. Man is perceived as a continually developing individual possessing innate rights and the ability to make choices and establish goals which determine his future. Fundamental to these rights is the right to attain optimal health. Nursing assists the individual to attain this level of health by facilitating adaptation that allows him to function at his developmental level within his social system.

Nursing, as a learned profession, is both an academic and practice-oriented discipline. As an academic discipline, nursing is developing and refining its substantive and practical knowledge base through continuing scientific inquiry into its theory and practice dimensions. Nursing science builds its body of knowledge through analysis of existing theories leading to the synthesis of new conceptual relationships that can be operationalized in professional nursing practice. Nursing will have a strong role in determining health policy and practice in the future. The emerging role of the professional nurse will emphasize primary care and prevention in traditional and innovative health care settings to assist man in attaining his optimal level of health.

As members of a practice-oriented discipline, professional nurses interact in collaborative relationships with other health professionals to formulate a holistic approach when assisting individuals, groups, and communities to meet health needs. The cognitive, affective, and psychomotor competencies of the professional nurse are integrated and demonstrated in assessing, planning, implementing and evaluating direct and indirect care of clients. Practitioners of professional nursing accept the rights and responsibilities of self-direction for nursing judgments and decision-making in order to facilitate the optimum well being of their clients on health-illness continuum. Inherent in these professional responsibilities are the leadership skills of accountability, advocacy, delegation and supervision.

As a service to man and society, nursing through use of the nursing process, carries out professional nursing activities to assist the individual, the family and the community in the pursuit of well being.

Philosophy of the Undergraduate Program

The baccalaureate graduate, as a beginning professional nurse, practices in settings where the focus of health care delivery is on health promotion, prevention of illness, and maintenance of health; in acute care settings where curative and restorative services are provided; and in long term care settings where the emphasis is on health rehabilitation and maintenance.

The faculty believes that education is a self-actualizing, creative lifetime endeavor which involves values-clarification, progressive inquiry, critical analysis and judgment. Baccalaureate nursing education incorporates liberal education with generalized preparation in professional nursing. Support of the individual's growth and self evaluation during the program enables the student to develop his own professional philosophy which will be refined throughout his career.

Gerontology Minor

The minor area of study in gerontology consists of 18 to 24 hours of course work in gerontology. At least 6 hours must be taken in course work at the 300 level or above. Course work for a minor area in gerontology is selected in consultation with Dr. Futrell. An all-University committee on gerontology education will oversee the minor offerings. Courses in aging may be transferred from other colleges and universities.

Selections may be made from the following University offerings. Additional offerings will be added by the All-University Committee at a later date:

- 30-201 Community Health
- 30-306 Introduction to Gerontology (Required)
- 32-202 Contemporary Health Problems
- 32-312 Long-term Care I
- 32-313 Long-term Care II
- 32-408 Health Law & Advocacy
- 32-454 Practicum in Program Development, Management & Evaluation in Services for the Elderly
- 33-553 Research Design & Methodology (Nurses Only)
- 33-555 Health Exercises for the Elderly
- 35-550 Biomedical Aspects & Pathophysiology of Aging
- 47-163 The Human Lifespan
- 47-264 Maturity and Aging
- 47-463 Seminar in Developmental Psychology (Death & Dying)
- 47-464 Seminar Maturity and Aging
- 47-551 Psychosocial Aspects of Aging

COURSE OF STUDY FOR NURSING (Class of 1979)

Freshman Year

Fall Semester		Spring Semester	
30-101	Introduction to Health Professions	35-102	Anatomy & Physiology II
		35-104	Anatomy & Physiology Lab II
35-101	Anatomy & Physiology I		
35-103	Anatomy & Physiology Lab I	39-102	Physical Education
39-101	Physical Education	42-102	College Writing & Literature
42-101	College Writing	48-	Sociology Elective
47-	Psychology Elective		Humanities Elective
	Elective		
	16		14

Sophomore Year

Fall Semester		Spring Semester	
30-202	Community Health (either semester)	35-252	Physiologic Sciences II
		35-254	Physiologic Sciences Lab II
35-211	Basic Clinical Microbiology & Pathology	47-163	Developmental Psychology
		47-262	Abnormal Psychology
35-213	Basic Clinical Microbiology & Pathology Lab	92-206	Elementary Statistical Analysis
			Elective
35-251	Physiologic Sciences I		
35-253	Physiologic Sciences Lab I		
42-	Literature Elective		
92-	Computer-Related Elective (suggest 92-209)		
	17		16

Junior Year

Fall Semester		Spring Semester	
33-301	Nursing Science I - Lecture	33-309	Nursing Science II - Lecture
33-302	Nursing Science I - Basic Clinical Module	33-310	Nursing Science II - Medical/Surgical/Psychiatric Nursing Clinical Module
33-303	Nursing Science I - Maternal/Child Health/Clinical Module		
33-304	Nursing Science I - Psychosocial Assessment	33-311	Nursing Science II - Maternal/Child Health/Community Clinical Module
33-305	Nursing Science I - History Assessment Lecture	33-312	Nursing Science II - Psychosocial Assessment
33-306	Nursing Science I - History/Physical Assessment Lab		
33-328	Dynamics of Interpersonal Relations (either semester)	33-313	Nursing Science II - History/Physical Assessment Lecture
		33-314	Nursing Science II - History Physical Assessment Lab
			Elective (either semester)
	16		17

Senior Year

Fall Semester		Spring Semester	
33-401	Nursing Science III - Lecture	33-406	Nursing Science IV - Lecture
33-402	Nursing Science III - Seminar	33-407	Nursing Science IV - Seminar
33-403	Nursing Science III - Clinical Hospital Laboratory	33-409	Nursing Science IV - Clinical Hospital Laboratory
33-404	Nursing Science III - Community Laboratory	33-410	Nursing Science IV - Community Laboratory
33-405	Nursing Science III - Clinical History/Physical Exam Recitation	33-411	Nursing Science IV - Clinical History/Physical Exam & Practicum
	Elective (300-400 level)		Elective (300-400 level)
	16		15

COURSE OF STUDY FOR NURSING (Class of 1980)

Freshman Year

Fall Semester			Spring Semester		
30-301	Introduction to Health Professions	2	35-102	Anatomy & Physiology II	3
35-101	Anatomy & Physiology I	3	35-104	Anatomy & Physiology Lab II	1
35-103	Anatomy & Physiology Lab I	1	39-102	Physical Education	1
39-101	Physical Education	1	42-102	College Writing & Literature	3
42-101	College Writing	3	48-	Sociology Elective	3
47-	Psychology Elective	3		Humanities Elective	3
	Elective	3			
		<hr/> 16			<hr/> 14

Sophomore Year

Fall Semester			Spring Semester		
30-201	Community Health (either semester)	3	33-202	Basic Principles for Nursing Practice	1.5
35-211	Basic Clinical Microbiology & Pathology	3	33-204	Basic Principles for Nursing Lab	1.5
35-213	Basic Clinical Microbiology & Pathology Lab	1	35-252	Physiologic Sciences II	3
35-251	Physiologic Sciences I	3	35-254	Physiologic Sciences Lab II	1
35-253	Physiologic Sciences Lab I	1	47-163	The Human Lifespan	3
42-	Literature Elective	3	47-232	Theories of Personality	3
92-	Computer-related Elective (suggest 92-209)	3	92-206	Elementary Statistical Analysis	3
		<hr/> 17	<hr/> 16		

Junior Year

Fall Semester			Spring Semester		
33-302	Dimensions of Professional Nursing Practice	2	33-308	Nursing Care of Clients in Stress II	6
33-303	Concepts Basic to Nursing Intervention	5	33-310	Nursing Care of Clients in Stress III	6
33-304	Pathophysiology	4	47-328	Dynamics of Interpersonal Relations	3
33-306	Nursing Care of Clients in Stress I	5			
		<hr/> 16			<hr/> 15

Senior Year

Fall Semester			Spring Semester		
33-401	Nursing Care of Clients in Crisis	12	33-402	Issues & Trends in Nursing	2
	Elective (300-400 Level)	3	33-403	Leadership in Nursing Practice	5
			33-404	Comprehensive Nursing Practice Elective (300-400 Level)	6
					3
		<hr/> 15			<hr/> 16

COURSE OF STUDY FOR NURSING (Class of 1981)

Freshman Year

Fall Semester			Spring Semester		
35-101	Anatomy & Physiology I	3	35-102	Anatomy & Physiology II	3
35-103	Anatomy & Physiology Lab I	1	35-104	Anatomy & Physiology Lab II	1
39-101	Physical Education	1	39-102	Physical Education	1
42-101	College Writing	3	42-102	College Writing & Literature	3
	Psychology Elective	3	48-	Sociology Elective	3
	Elective (Area II or III)	3		Humanities Elective	3
		<hr/> 14			<hr/> 14

Sophomore Year

Fall Semester

30-201	Community Health (either semester)	3
35-211	Basic Clinical Microbiology & Pathology	3
35-213	Basic Clinical Microbiology & Pathology Lab	1
35-251	Physiologic Sciences I	3
35-253	Physiologic Sciences Lab I	1
42-	Literature Elective	3
92-	Computer-related Elective (Suggest 92-209)	3
		17

Spring Semester

33-201	Introduction to Nursing	5
33-202	Pathophysiology	3
33-252	Physiologic Sciences II	3
35-254	Physiologic Sciences Lab II	1
47-163	The Human Lifespan	3
47-232	Psychology of Personality	3
		18

Junior Year

Fall Semester

33-301	Dimensions of Professional Nursing Practice	2
33-302	Concepts Basic to Nursing Intervention	5
33-303	Nursing Care of Clients in Stress I	5
92-206	Elementary Statistical Analysis	3
		15

Spring Semester

33-304	Nursing Care of Clients in Stress II	6
33-305	Nursing Care of Clients in Stress III	6
47-328	Dynamics of Interpersonal Relations	3
		15

Senior Year

Fall Semester

33-401	Nursing Care of Clients in Crisis	12
	Elective (300-400 Level)	3
		15

Spring Semester

33-402	Issues & Trends in Nursing	2
33-403	Leadership in Nursing Practice	5
33-404	Comprehensive Nursing Practice Elective (300-400 Level)	6
		3
		16

COURSE OF STUDY FOR NURSING (Class of 1982 and following)

Freshman Year

Fall Semester

39-101	Physical Education	1
42-101	College Writing	3
47-101	General Psychology	3
	Elective	3
84-111	General Chemistry I	4
		14

Spring Semester

35-201	Anatomy & Physiology I	3
35-203	Anatomy & Physiology Lab I	1
42-102	College Writing & Literature	3
48-101	Introduction to Sociology	3
	Elective (Area II)	3
84-112	General Chemistry II	4
		17

Sophomore Year

Fall Semester

35-202	Anatomy & Physiology II	3
35-204	Anatomy & Physiology Lab II	1
35-211	Basic Clinical Microbiology & Pathology	3
35-213	Basic Clinical Microbiology & Pathology Lab	1
45-202	Introduction to Logic	3
47-163	The Human Lifespan	3
	Elective	3
		17

Spring Semester

33-201	Introduction to Nursing	5
33-202	Pathophysiology	3
47-232	Psychology of Personality	3
47-328	Dynamics of Interpersonal Relations	3
92-383	Introduction to Statistics	3
		17

Junior Year

Fall Semester			Spring Semester		
30-201	Community Health	3	33-304	Nursing Care of Clients in Stress II	6
33-301	Dimensions of Professional Nursing Practice	2	33-305	Nursing Care of Clients in Stress III	6
33-302	Concepts Basic to Nursing Intervention	5		Elective	3
33-303	Nursing Care of Clients in Stress I	5			
39-101	Physical Education	1			
		<hr/> 16			<hr/> 15

Senior Year

Fall Semester		Spring Semester		
33-401	Nursing Care of Clients in Crisis	12	33-402 Issues & Trends in Nursing	2
	Elective (300-400 Level)	3	33-403 Leadership in Nursing Practice	5
			33-404 Comprehensive Nursing Practice	6
			Elective (300-400 Level)	3
		<hr/> 15		<hr/> 16



DEPARTMENT OF PHYSICAL EDUCATION

Ignatius Ciszek, Chairperson

Professor: Ignatius Ciszek

Associate Professors: Richard Aronson, A. James Oliver

Assistant Professors: Robert Callery, Claire Chamberlain, Denise Legault, William J. Riley, Jr., James Stone

Instructor: Grant Carrow

The Department of Physical Education administers the physical activities program which is required of all undergraduate students by the University Core Requirements and offers a minor area of study in coaching.

Physical Education

The physical education program of the University has as its general objective the development of basic motor skills which will enhance the productive use of leisure time. More specifically, the program seeks to improve individual health through increased organic vigor, to develop effective sports skills, to attain desirable standards of team conduct, and to promote life-time interest in physical activity. In attaining these objectives, students are encouraged to select courses from both team and individual activities.

All freshmen and transfer students are required to take a swimming test before initiating the physical activities program. Students who are unable to swim are encouraged to take a course in beginning swimming for the purposes of developing basic survival skills and acquiring a level of personal confidence fundamental to aquatic leisure activity.

Activity Courses

All students must successfully complete one year of supervised physical activity in fulfillment of the University Core Requirements unless excused upon written confirmation of permanent physical disability by a physician. Students who are veterans may at their option be excused from the activities requirement in recognition of the physical activities program of basic training which is common to the several armed forces. Courses which satisfy the activities requirement are offered with a prefix number of "39".

Theory Courses

Theory courses may be elected by students who are interested in receiving theoretical instruction concerning recreation, coaching, fitness and nutrition, and care and prevention of athletic injuries. These courses do not satisfy the requirements of the University Core concerning physical activities but may be counted as "unrestricted elective courses" in the student's program of studies. Theory courses are offered with a prefix number of "38".

Coaching Minor

A minor in coaching consists of 21 credits, 15 of which are specified core requirements.

Core Requirements

- 38-100: Care and Prevention of Athletic Injuries
- 38-210: Psychology of Coaching
- 38-322: Practicum in Athletics
- 38-420: Kinesiology
- 38-450: Physiological Aspects of Coaching

Additional courses are selected from the offerings of the Department of Physical Education and the Department of Health.



FACULTY OF THE COLLEGE OF HEALTH PROFESSIONS

DEAN OF THE COLLEGE

Gertrude F. Barker, R.N.; B.S.; M.S.; Ed.D.

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Sheryd J. Woltman, Instructor, Nursing; B.S., M.S., Boston University.

Martha F. Zier, Instructor, Nursing; B.S., Simmons College; M.S., Boston University.

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Terry Jean, C.L.A. (ASCP), Clinical Medical Technology; H.E.W., St. Joseph's Hospital, Blood Bank.

Rita Keating, M.T. (ASCP), Clinical Medical Technology; St. John's Hospital, Hematology; B.S., St. Mary's College.

Manilo LoConte, Clinical Medical Technology; Associate Pathologist, St. John's Hospital; M.D., University of Padua.

David McGoldrick, Clinical Medical Technology; Chief Pathologist and Medical Director, St. John's Hospital; M.D., Cornell University Medical School.

James Norton, Clinical Medical Technology; Chief Pathologist and Medical Director, St. Joseph's Hospital; M.D., Johns Hopkins.

John Newell, Clinical Medical Technology; St. Joseph's Hospital, Hematology; B.S., Notre Dame College.

William O'Rourke, Clinical Nursing; B.A., St. Bonaventure University; M.A., Holy Name College; M.Ed., University of New Hampshire; Ph.D., Boston College.

Dorayne Passler, Clinical Medical Technology, Clinical Chemistry; B.S./M.T., Lowell State College.

Raymond Phillips, Clinical Medical Technology, St. Joseph's Hospital; B.S., St. John's University.

Maria Poor, C.L.A. (ASCP), Clinical Medical Technology; St. Joseph's Hospital.

Lois Reible, M.T. (ASCP), Clinical Medical Technology; St. John's Hospital, Hematology; B.S., Marian College.

Robert Rodger, Clinical Medical Technology; Assistant Chief Pathologist, St. Joseph's Hospital; M.D., Harvard University.

Eugene Rodgers, M.T. (ASCP), Clinical Medical Technology; St. John's Hospital, Chemistry; B.S., Lowell State College.

Byron Roseman, Clinical Nursing; A.A.B.A., George Washington University; M.D., Tufts University.

Roland Savastano, M.T. (ASCP), Clinical Medical Technology; Lowell General Hospital, Chemistry; B.S., Merrimack College.

VISITING LECTURERS

Ann Elizabeth Angus, Physical Education; B.S., University of Massachusetts.

Barbara Cocanour, Clinical Medical Technology, Physiology; A.B., Defiance College; M.S., University of Maine; Ph.D., University of Maine.

Charlotte Cahill, Clinical Medical Technology, Physiology; B.A., University of Notre Dame.

Kaye Doyle, Clinical Medical Technology, Physiology; B.S., University of Massachusetts; M.S., University of Lowell.

William Glennon, Clinical Medical Technology, Chemistry; B.S., Boston College; M.A. in Biology, M.A. in Biochemistry, Boston University.

James Griffin, Clinical Medical Technology, Hematology; A.B., Brown University; M.S., Brown University; M.D., Harvard Medical School.

Carole Pearce, Clinical Nursing; B.S.N., St. Anselm's College; M.S.N., Boston University.

Christopher Rowse, Clinical Medical Technology, Chemistry; B.A., Adams State College; M.A., University of Massachusetts.

Effegenia Sintros, Clinical Medical Technology; B.A., Emmanuel College; M.S., Northeastern University.

Mary E. Wheeler, Clinical Nursing; B.S., M.S., Boston University.





COLLEGE OF MANAGEMENT SCIENCE

Daniel Diamond, Dean

The beginning of the twentieth century heralded the advent of an interdependent and urbanizing society in which business and business decisions became increasingly complex. The development of business theories, notably Taylor's scientific management, stressed the need for the study and research of business problems. In response many of the nation's leading universities established schools of business. In the succeeding fifty years, these schools flourished. However, they tended to emphasize specific business problems and areas rather than generalized solutions. Their emphasis was primarily vocational. Students, for the most part, were prepared for a particular position in a particular industry.

In the late 1950s, the Carnegie Corporation and the Ford Foundation each sponsored separate studies of the state of collegiate education for business. The studies came to similar conclusions. They were critical of curriculums that trained students for narrow specialized tasks. They stressed the need for placing the major emphasis on analytical decision making in a rapidly changing economic environment. Their recommendations were influential in initiating critical self-studies by business schools. The resulting changes led to a fundamental change in business school curriculums. Schools turned their attention from particular occupations and industries to the study of organizations. Emphasis was placed on developing analytical tools and techniques that could be applied to the solution of common administrative problems, be they in business, government or non-profit organizations.

The improved quality of offerings made business graduates more valuable to employers. These employers include governmental bodies and non-profit organizations as well as private businesses. These factors, together with the growth of the economy, sharply increased the demand for accountants, applied economists, managers and other business professionals. Projections for the next decade prognosticate a continuation of rising demand.

OBJECTIVES OF THE COLLEGE OF MANAGEMENT SCIENCE

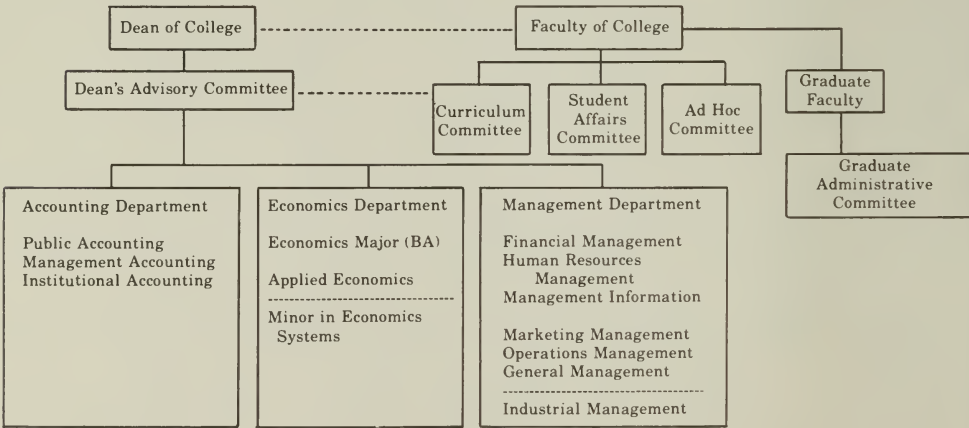
The College of Management Science is one of the larger collegiate schools of business in Massachusetts. In terms of publically supported higher education for business, it is second only to the University of Massachusetts at Amherst. The College is a member of the American Assembly of Collegiate Schools of Business and offers several standard business programs. It seeks to provide its students with a quality education which will enable them to successfully function as professionals in business and nonbusiness organizations. The key elements of a quality education are content and method. The faculty through research, consulting, and other scholarly activities strives to keep pace with the rapidly changing subject matter in their fields. A variety of learning modes are utilized with emphasis on the lecture and case method techniques.

In addition to its own majors, the College services other students at the University. The industrial technology program requires about a third of its courses in management science subjects. The College of Health Professions' program in health services administration and the College of Pure and Applied Science's program in science administration utilize the foundations in business offerings. Other students throughout the University are required or elect to take management science courses.

The college also participates in efforts to revitalize the region's economy. Faculty are encouraged to direct their research efforts to deal with regional business and economic issues. The resources and experience of the College are made available to assist in the solution of problems faced by business and governmental units in the Merrimack Valley.

COLLEGE ORGANIZATION & GOVERNANCE

The College of Management Science is organized into three departments and is administered by a dean, who is assisted by an advisory committee. The three departments are responsible for developing course offerings and programs of studies. The faculty of the College has overall responsibility for all academic policies of the College. The Dean's Advisory Committee is responsible for enforcing the academic standards of the College and also serves as a review body for suspended students seeking readmission with probationary status.



Dean's Advisory Committee

Albert Cederlund, Economics
Daniel Diamond, Dean
Gerald Downey, Accounting
Brackston Hinchey, Management
Linda Kistler, Accounting
Carol McDonough, Economics
Louis Yelle, Management

Advisory Council

The management science faculty and the several departments are assisted in formulating professional curricula by the following advisory council.

Lawrence Ansin, Joan Fabrics Corp.
Arthur Kelts, Northern Middlesex Chamber of Commerce & Industry
Raymond F. Miller, Jr., Union National Bank
Catherine O. Monson, Prince Macaroni Manufacturing Co.
George Sheehan, Massachusetts Department of Commerce and Development
D. Harold Sullivan, Sullivan, Bille and Co.

BACCALAUREATE DEGREE PROGRAMS

The College of Management Science offers undergraduate programs leading to the degrees of Bachelor of Arts, Bachelor of Science in Business Administration, and Bachelor of Science in Industrial Management. For details concerning graduate business programs, see the *Graduate School Catalogue*.

Bachelor of Arts Degree

The Bachelor of Arts degree is offered with a major in economics. This degree program provides opportunities for pursuing an economics major within the context of more flexible curriculum requirements than are permitted for economics students who pursue the professional degree of Bachelor of Science in Business Administration. University requirements concerning the Bachelor of Arts degree are stated elsewhere in this publication under the heading "Academic Policies: Baccalaureate Degrees" and "Academic Policies: Major Field Requirements."

Bachelor of Science in Business Administration Degree

The Bachelor of Science in Business Administration degree is designed to provide students with those liberal arts and science foundations, analytical skills, and specialized professional courses which will enable them to function as effective professional administrators in business. The first two years are comprised of liberal arts, science and professional skill courses. These subjects provide the foundation on which the advanced courses are built. In the liberal arts and sciences, emphasis is upon English, the behavioral sciences (psychology and sociology), and mathematics — including an introductory computer course. The professional skill courses include accounting, economics, and statistics. During the last two years students take professional course courses in business law, finance, government and business, marketing, operations management, managerial economics, and business policy. In addition, students select program

options in accounting, economics, or management. Regardless of department options elected, students have sufficient electives which permit them to tailor their programs to their special interests.

Bachelor of Science in Industrial Management

The degree of Bachelor of Science in Industrial Management is designed to provide students with a specialized education in technological and management areas and is an inter-collegiate program of the College of Engineering and the College of Management Science.

GENERAL COLLEGE REQUIREMENTS

Each candidate for an undergraduate degree must satisfy the general University requirements for graduation and must complete all credits as specified by one of the established curricula. The College does not impose a grade-point average requirement which is greater than the general requirement of the University for any program except accounting. Students majoring in accounting are required to earn a minimum average of 2.50 in their major courses in order to be recommended for graduation.

Due to the structured nature of the baccalaureate programs in business administration and industrial management, students who matriculate in other colleges of the University may not minor in business or industrial management. Such students may minor in economics or may elect courses in the foundations of business. They may also elect a second major in the College of Management Science provided that they also complete all related requirements as specified by the concerned department of the College of Management Science.

Residency Requirement

In addition to the minimum University residency requirements, the College of Management Science requires the senior year's work, with minor exceptions, to be taken in residence at the University.

Declaration of Major

Students enrolled in the College of Management Science of necessity are committed to pursue one of the established college programs and are required to declare their choice of degree program upon enrollment. Students pursuing the Bachelor of Science in Business Administration degree pursue a core program for the first two years and are required to declare a program option by the end of the sophomore year. In any event, all students are required to file specific declarations of major or degree programs with the Office of the Registrar no later than the beginning of their junior year. Students enrolled in the College of Liberal Arts who wish to elect a second major in economics must secure the approval of the chairperson of the Department of Economics prior to making such a declaration and must file the appropriate University form with the Office of the Registrar no later than the end of the sophomore year.

Change of Major

Bachelor of Arts degree candidates in the College of Management Science may not drop the economics major without withdrawing from the University, transferring to another college of the University, or changing their degree program to the Bachelor of Science in Business Administration or the Bachelor of Science in Industrial Management. Students who wish to change their major and degree program within the College of Management Science must secure the approval of the chairperson of the appropriate department of the College. Students who wish to drop their program or major in the College of Management Science and to elect a major offered by another college of the University should consult the policy concerning intercollegiate transfer within the University which appears in the publication concerning *Admission Regulations and General Academic Rules*. All such changes of program require notification of the Office of the Registrar through the filing of the form for Declaration of Major or Change of Major. Students who withdraw from the University must do so through the Office of the Registrar. Bachelor of Arts degree candidates may change their minor studies when changing their majors and may substitute alternative minor programs without changing majors. Such changes are subject to the established regulations of the colleges in which such studies are pursued. Additional course work beyond the minimum 120 credits and extension of the normal four-year period of study may be expected for students who change their major options later than the first semester of their junior year or who change their degree programs later than the end of the freshman year.

Students who are candidates for the Bachelor of Science in Business Administration may change their degree programs when they have received the permission of the chairperson of the appropriate department. Students may transfer into Bachelor of Science in Business Administration and Bachelor of Science in Industrial Management programs from other colleges of the University. However, students making such a transfer may expect to extend their period of study beyond the normal eight semesters, particularly if they transfer after the second semester of the sophomore year.

Transfer Policies

Students transferring to the College of Management Science from other colleges of the University or from other institutions may expect recognition of previously completed courses if these are equivalent to those which are specified by curricula of the College.

Transfer from Other Institutions

Courses which are transferred from other institutions are initially evaluated by the Office of Admissions in terms of general University requirements when a student is admitted to the University and are also evaluated by professional departments in terms of college and program requirements at the time a student is accepted for matriculation in the College of Management Science. Courses which are transferred to the University under provisions of the Massachusetts

Transfer Compact and which are not creditable to requirements of the College of Management Science or as unrestricted elective courses will be listed on the student's permanent record card but will not apply to the minimum degree requirements. In the event that a student who has transferred to the University under the Massachusetts Transfer Compact subsequently makes an intercollegiate transfer to the College of Management Science, all previously completed courses, including transferred courses from the compact institution, will be reevaluated in terms of their applicability to degree requirements of the College of Management Science.

The applicability of grades received in transferred courses for the determination of the grade-point average of the student's major at the University of Lowell is determined by policies of each of the colleges. The policy of the College of Management Science is not to count such grades for the purpose of determining the student's major grade-point average.

Repetition of Transferred Courses

A student who has been granted transfer credit, and on this basis has been assigned to advanced courses for which the transferred course is a prerequisite, may be advised to repeat such transferred work at the University or to take a more elementary course than that which has been transferred when the competence of the student has been demonstrably inadequate. Permission to repeat a transferred course is granted by filing an academic petition form through the office of the College dean. Since credit may not be granted more than once for the completion of any course, a condition for filing such a petition is the simultaneous filing of a request to revoke recognition of the previously transferred course.

Intercollegiate Transfer to the College of Management Science

Students wishing to transfer from another college of the University, or from baccalaureate continuing-education programs of the Evening School, must have completed successfully 15 credits and must file a petition, together with a transcript of their permanent record cards, with the appropriate chairperson and the Dean of the College of Management Science by November 1 for spring semester transfer and by April 1 for fall semester transfer. Students are referred to University policies concerning intercollegiate transfer which appear elsewhere in this publication under the heading "Academic Policies: Change of Major with Intercollegiate Transfer" for further procedural details. Records of students who are approved for transfer are reviewed by the Office of the Dean and, irrespective of grades previously received in other college programs, all courses which may not be applied to college or program requirements are deleted from the student's cumulative grade-point average.

COOPERATIVE EDUCATION AND CONTRACT LEARNING PROGRAM

The College of Management Science is a full participant in the University Cooperative Education Work Experience Program and eligible students may

elect to petition for participation in the Program. Through contract learning, the student is provided with an opportunity to learn more about various professional fields within the College of Management Science. To qualify, a student must have a grade-point average of at least 2.50 and must be a second semester junior. The heart of the program rests in the contract drawn by the student and presented to a faculty sponsor. The student submits to a faculty sponsor an outline of the project to be pursued. The proposal includes a statement of the relationship of the proposed project to a theory or technique applicable to a student's major. For further information, students should refer to policies which appear elsewhere in this publication under the heading "Academic Policies: Cooperative Education" and should consult with their department chairpersons.

ELECTIVE COURSES IN FOUNDATIONS OF BUSINESS*

When policies of the colleges in which they are matriculating permit, students of the University may elect some or all of the following courses or any other management science course for which they have the necessary prerequisites.

60-201	Accounting I	3
60-202	Accounting II	3
64-201	Economics I	3
64-202	Economics II	3
64-211	Statistics I	3
64-212	Statistics II	3
66-200	The Business System	3

*Not available to students in the College of Management Science.



DEPARTMENT OF ACCOUNTING

Gerald F. Downey, Chairperson

Professors: William Burke, Gerald Downey, Linda Kistler, George Toscano

Associate Professor: Charles Feeney

Assistant Professors: John Carrigg, Samuel Chessler, Edward Gurry, Brooke Hargreaves-Heald, Russell Karl, Richard Solano, Charles Thompson, Daniel Verreault

The Department of Accounting offers an accounting program which leads to the degree of Bachelor of Science in Business Administration.

Accounting Program

The fundamental objective of the accounting program is to prepare students for professional positions in public accounting, management (industrial) accounting, and governmental or not-for-profit accounting. The program offers a rigorous preparation for professional careers by providing several "tracks" to fit the needs of a diverse student body in the College of Management Science.

The three "tracks" available within the accounting program are as follows:

Public Accounting Option

Students interested in public accounting careers are expected to enroll in courses designed to prepare them for specialized activities in auditing, management information systems, and taxation. Because of the intense competition for positions in public accounting firms, students selecting this option are expected to demonstrate high standards of academic achievement as well as a firm commitment to public accounting careers. Senior students are encouraged to sit for the CPA examination in May prior to their graduation in June.

Management (Industrial) Accounting Option

Students desiring to pursue careers in private industry should enroll in accounting courses designed to prepare them for management positions in industrial accounting. Courses in cost accounting, budgeting and standard costs, controllership, and financial analysis are emphasized in this specialty, and students are encouraged to complete elective courses in finance as well as accounting in order to offer as broad a background as possible in subjects which are encountered in a private enterprise environment.

Institutional (Not-For-Profit) Accounting Option

Federal, state, and local governmental units have become increasingly influential in the American economy. The growth of these institutions as well as other not-for-profit institutions such as schools and hospitals have created emerging opportunities for service as professional accountants. Students desiring to specialize in not-for-profit accounting are advised to obtain a strong foundation in financial, cost, and tax accounting and to enroll in the governmental accounting and management information systems electives.

Accounting students interested in management information systems may also elect the following courses and use them as accounting electives: 66-404, Computer Applications to Management; 66-473, Operations Management III; 66-475, Systems Analysis; 66-477, Information Systems Management; and 66-478, Problems in Information Systems.

Students desiring to obtain a general accounting background may select a variety of courses from a large number of accounting electives while completing basic requirements for the accounting program.

The accounting discipline is intended to provide students with quantitative analytical skills necessary for developing financial information for management, the public, and not-for-profit institutions. Data accumulation, analysis, and interpretation together with communication of results are fundamental activities of professional accountants. The specialties within the accounting program at the University of Lowell are designed to prepare graduates for service in a dynamic and respected profession. The student is required to maintain a minimum grade point average in accounting courses of 2.5 in order to be recommended by the Accounting Department for graduation.



COURSE OF STUDY FOR BUSINESS ADMINISTRATION (ACCOUNTING)

Lower Division: Common to All Business Administration Curricula

Freshman Year

Fall Semester		Spring Semester	
42-101 College Writing	3	42-102 College Writing and Literature	3
92-101 Mathematical Analysis I	3	92-102 Mathematical Analysis II	3
47-101 General Psychology	3	48-101 Sociology	3
** History or Political Science		** History or Political Science	
Elective	3	Elective	3
* Science Elective	3	* Science Elective	3
39-100 Physical Education	1	39-200 Physical Education	1
<hr/>		<hr/>	
16		16	

*Recommended is 83-101 and 83-102 (Life Science), a course for non-science majors. However, another science elective from the departments of Physics, Chemistry or Geology may be chosen.

**Recommended is Western Civilization Before and After 1715. However, another history or political science elective may be chosen.

Sophomore Year

Fall Semester		Spring Semester	
60-201 Accounting Principles I	3	60-202 Accounting Principles II	3
64-211 Statistics I	3	64-212 Statistics II	3
64-201 Economics I	3	64-202 Economics II	3
92-201 Mathematical Analysis III	3	92-242 Electronic Data Processing	3
* 66-253 Organizational Behavior	3	42-111 Technical and Business Communications	3
<hr/>		<hr/>	
15		15	

*Sophomores will be split into two groups alternating 66-253 with 42-111.

Upper Division: Accounting Program

Junior Year

Fall Semester		Spring Semester	
60-301 Intermediate Accounting I	3	60-302 Intermediate Accounting II	3
66-321 Marketing Principles	3	66-332 Money and Banking	3
66-331 Business Finance	3	64-307 Government and Business	3
66-371 Operations Management I	3	60-411 Cost Accounting I	3
60-362 Business Law I	3	Area I, II or III Elective	3
<hr/>		<hr/>	
15		15	

Senior Year

Fall Semester		Spring Semester	
60-401 Advanced Financial Accounting I	3	66-498 Business Policy	3
64-312 Managerial Economics	3	Accounting Elective	3
Accounting Elective	3	College of Management Science	
Area II Elective	3	Elective	3
General Elective	3	Area I, II or III Elective	3
<hr/>		<hr/>	
15		15	

DEPARTMENT OF ECONOMICS

Carol McDonough, Chairperson

Professors: Daniel Diamond, Thomas Macbeth, Carol McDonough

Associate Professors: Albert Cederlund, George Dery, Susan Goodwin, Paul Snoonian

Assistant Professors: Richard Healy, Jr., Robert Obutelewicz, Hak Pyo, Charles Saccardo, Ernesto Sanz, Charles White

The Department of Economics offers an economics program which leads to the degree of Bachelor of Science in Business Administration, a major in economics which leads to the degree of Bachelor of Arts, and a minor area of study in economics.

Economics Program

(Bachelor of Science in Business Administration)

The economics program is designed to provide a strong background in economic theory and applied economic analysis, within the framework of a business education. In the first two years, the program expands the student's knowledge of mathematics and the liberal arts and introduces him to economics, accounting, and statistics. During the third and fourth years, the student pursues those areas of study which are of particular interest and are consistent with his career objectives; the study of economics is complemented by courses in management, finance, business law, and the humanities.

The goals of the economics program are to provide a sound, working knowledge of economics, preparation for a career in business, and a foundation for graduate study. Since the program equips the student with the techniques of business analysis and problem solving, a graduate is equipped for employment in a variety of fields in business and government. The program is also recommended for students planning graduate study in economics, business, and law.

COURSE OF STUDY FOR BUSINESS ADMINISTRATION (ECONOMICS)

Lower Division: Common to All Business Administration Curricula

Freshman Year

Fall Semester		Spring Semester	
42-101 College Writing	3	42-102 College Writing and Literature	3
92-101 Mathematical Analysis I	3	92-102 Mathematical Analysis II	3
47-101 General Psychology	3	48-101 Sociology	3
# History or Political Science		# History or Political Science	
Elective	3	Elective	3
* Science Elective	3	* Science Elective	3
39-100 Physical Education	1	39-200 Physical Education	1
	16		16

*Recommended is 83-101 and 83-102 (Life Science), a course for non-science majors. However, another science elective from the departments of Physics, Chemistry or Geology may be chosen.

#Recommended is Western Civilization Before and After 1715. However, another history or political science elective may be chosen.

Sophomore Year

Fall Semester		Spring Semester	
60-201 Accounting Principles I	3	60-202 Accounting Principles II	3
64-211 Statistics I	3	64-212 Statistics II	3
64-201 Economics I	3	64-202 Economics II	3
92-201 Mathematical Analysis III	3	92-242 Electronic Data Processing	3
* 66-253 Organizational Behavior	3	42-111 Technical and Business Communications	3
	15		15

*Sophomores will be split into two groups alternating 66-253 with 42-111.

Upper Division: Economics Program

Junior Year

Fall Semester		Spring Semester	
66-331 Business Finance	3	66-332 Money and Banking	3
66-321 Marketing Principles	3	64-304 Macroeconomic Theory	3
66-371 Operations Management	3	64-307 Government and Business	3
60-362 Business Law I	3	Economics Elective	3
64-303 Microeconomic Theory	3	Area I, II or III Elective	3
	15		15

Senior Year

Fall Semester		Spring Semester	
64-312 Managerial Economics	3	66-498 Business Policy	3
Economics Elective	3	Economics Elective	3
General Elective	3	General Elective	3
College of Management Science		College of Management Science	
Elective	3	Elective	3
Area II Elective	3	Area I, II or III Elective	3
	15		15

Economics Major (Bachelor of Arts)

Economics as a discipline is concerned with the principles underlying the production and exchange of products and services. The study of economics stems from the scarcity of resources and the limitless nature of our demands for products and services. Societies must therefore choose the goods and services which will be produced from among the larger range of production possibilities. Economics develops the principles and concepts which follow from this fact of scarcity and applies them to the analysis of various aspects of human activity requiring choices among competing alternatives.

The economics major completes a sequence of fundamental economics courses and economics electives which provide a sound knowledge of economic concepts and analyses. The introductory courses survey economic problems, policies, and theory. Required courses in microeconomic and macroeconomic theory and in statistics provide a deeper analytical foundation and the necessary quantitative tools. Economics electives provide students with opportunities to explore subject areas which are of personal interest and which are consistent with their career objectives. The major in economics must include, at a minimum, the following courses:

64-201: Economics I	3
64-202: Economics II	3
64-211: Statistics for Business and Economics I	3
64-212: Statistics for Business and Economics II	3
64-303: Microeconomic Theory	3
64-304: Macroeconomic Theory	3
Economics Electives (minimum requirement)*	12
	30

*At least 9 credits must be taken at the 300 or 400 levels.

Economics majors will be counseled by their faculty advisors to select a minor area of studies or a program of elective courses from such related disciplines as political science, history, sociology, accounting, mathematics and management.

Details concerning the requirements for minor programs are provided in the bulletins of the several colleges of the University and these should be consulted by students contemplating minor programs which are not offered by the College of Management Science. Minor programs consist of 18-24 semester credits as specified by concerned departments and must include at least 6 credits of courses which are on or above the 300 level.

Economics Minor*

Students matriculating for degrees in other colleges of the University may elect the following program when policies of the colleges in which they are matriculating permit. All minor programs of the University require 18-24 credits and a minimum of 6 credits on the 300 level or above.

64-201	Economics I	3
64-202	Economics II	3
	Four (4) Economics Electives	12
		18

*Not available to students in the College of Management Science.



DEPARTMENT OF MANAGEMENT

Brackston Hinchey, Chairperson

Professors: Leslie Dawson, Stuart Mandell, Santo Pullara

Associate Professors: Jack Alexander, Brackston Hinchey, Goang Tzier Liaw, James Monahan, Thomas Murphy, Joseph Rocha, Irwin Shapiro, Louis Yelle

Assistant Professors: Winship Fuller, Riaz Kahn, Yash Puri, Ralph Rieth

Instructor: Joseph Thomas

The Department of Management offers a management program which leads to the degree of Bachelor of Science in Business Administration. In cooperation with the College of Engineering, the Department also administers the Bachelor of Science in Industrial Management program.

Management Program (Bachelor of Science in Business Administration)

The Department of Management offers the student an opportunity to select an area of management concentration. After completion of the required core subjects, the junior level student must declare an area of concentration consisting of at least four advanced courses in the area. The selection of the area of concentration, and the courses which comprise it, is made with the assistance of the student's faculty advisor.

The area options currently offered are described below:

Financial Management

Students choosing this area of concentration are required to take 66-332 Money and Banking; 66-431 Financial Management; 66-432 Financial Institutions and Markets; 66-433 Problems in Finance; and 66-434 Investments.

Human Resources Management

Students choosing this area of concentration are required to take 66-451 Personnel Management; 66-452 Industrial Relations; 47-308 Dynamics of Interpersonal Relations; and 66-455 Problems in Human Resources Management; plus any two of the following: 64-302 Labor Economics; 66-472 Organizational Development; 66-453 Management and Contemporary Society.

Management Information Systems

Students choosing this area of concentration are required to take 66-404 Computer Applications to Management; 66-475 Systems Analysis; 66-477 Information Systems Management; plus one of the following: 66-473 Operations Management III, 66-478 Problems in Information Systems; or 92-365 Business Computer Programming.

Marketing Management

Students choosing this area of concentration are required to take 66-326 Marketing Research; 66-423 Marketing Management; plus two elective

marketing courses from the following: 66-324 Industrial Marketing; 66-325 Advertising; 66-421 Purchasing and Materials Management; 66-422 Retailing; 66-425 Consumer Behavior; 66-426 Sales Management; 66-428 International Marketing; 66-429 Special Topics in Marketing; 66-492 Physical Distribution Management.

Operations Management

Students choosing this area are required to take 66-473 Operations Management III; 66-474 Operations Management IV; plus any two of the following: 66-372 Operations Management II; 66-404 Computer Applications to Management; 66-421 Purchasing and Materials Management; 66-475 Systems Analysis; 66-477 Information Systems Management; 66-492 Physical Distribution Management; 20-476 Statistical Quality Control.

General Management

Students choosing the general management area are required to take 66-404 Computer Applications to Management; 66-431 Financial Management; 66-423 Marketing Management; 66-471 Analytical Methods in Management; and 66-472 Organizational Development.

The Small Business Practicum (66-495) is acceptable as an elective in all areas of concentration. This course involves teams of students in management cases drawn from the local community through the cooperation of the U.S. Small Business Administration. A student who is interested in this course should see his or her academic advisor for further details.



COURSE OF STUDY FOR BUSINESS ADMINISTRATION (MANAGEMENT)

Lower Division: Common to All Business Administration Curricula

Freshman Year

Fall Semester			Spring Semester		
42-101	College Writing	3	42-102	College Writing and Literature	3
92-101	Mathematical Analysis I	3	92-102	Mathematical Analysis II	3
47-101	General Psychology	3	48-101	Sociology	3
	History or Political			History or Political	
	Science Elective**	3		Science Elective**	3
	Science Elective*	3		Science Elective*	3
39-100	Physical Education	1	39-200	Physical Education	1
		<hr/> 16			<hr/> 16

*Recommended is 83-101 and 83-102 (Life Science), a course for non-science majors. However, another science elective from the departments of Physics, Chemistry or Geology may be chosen.

**Recommended is Western Civilization Before and After 1715. However, another history or political science elective may be chosen.

Sophomore Year

Fall Semester			Spring Semester		
60-201	Accounting Principles I	3	60-202	Accounting Principles II	3
64-211	Statistics I	3	64-212	Statistics II	3
64-201	Economics I	3	64-202	Economics II	3
92-201	Mathematical Analysis III	3	92-242	Electronic Data Processing	3
66-253	Organizational Behavior*	3	42-111	Technical and Business Communications*	3
		<hr/> 15			<hr/> 15

*Sophomores will be split into two groups alternating 66-253 with 42-111.

Upper Division: Management Program (Financial Management Emphasis)

Junior Year

Fall Semester			Spring Semester		
60-362	Business Law I	3	60-311	Managerial Accounting	3
66-321	Marketing Principles	3	64-307	Government and Business	3
66-331	Business Finance	3	66-332	Money and Banking	3
66-371	Operations Management I	3		Area I, II or III Elective	3
	General Elective	3		Area I, II or III Elective	3
		<hr/> 15			<hr/> 15

Senior Year

Fall Semester			Spring Semester		
66-431	Financial Management	3	64-312	Managerial Economics	3
66-432	Financial Institutions and Markets	3	66-498	Business Policy	3
	Area II Elective	3	66-433	Problems in Finance	3
	General Elective	3	66-434	Investment Management	3
	General Elective (or ROTC)	3		General Elective (or ROTC)	3
		<hr/> 15			<hr/> 15

Upper Division: Management Program (Human Resource Management Emphasis)

Junior Year

Fall Semester			Spring Semester		
60-362	Business Law I	3	60-311	Managerial Accounting	3
66-321	Marketing Principles	3	64-307	Government and Business	3
66-331	Business Finance	3	66-451	Personnel Management	3
66-371	Operations Management I	3	47-328	Dynamics of Interpersonal	
	General Elective	3		Relations	3
				Area I, II or III Elective	3
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Senior Year

Fall Semester			Spring Semester		
66-452	Industrial Relations	3	64-312	Managerial Economics	3
	Human Resources Management		66-498	Business Policy	3
	Elective*	3	66-455	Problems in Human	
	General Elective	3		Resources Management	3
	General Elective (or ROTC)	3		Human Resources Management	
	Area II Elective	3		Elective*	3
				General Elective (or ROTC)	3
		15			15

*Human Resource Management Electives include:

- 64-302 Labor Economics (May be taken in lieu of 66-452)
- 66-453 Management & Contemporary Society
- 66-457 Compensation Management
- 66-472 Organizational Development

Upper Division: Management Program (Management Information Systems Emphasis)

Junior Year

Fall Semester			Spring Semester		
60-362	Business Law I	3	60-311	Managerial Accounting	3
66-321	Marketing Principles	3	64-307	Government and Business	3
66-331	Business Finance	3	66-475	Systems Analysis	3
66-371	Operations Management I	3		Area I, II or III Elective	3
	General Elective	3		Area I, II or III Elective	3
		15			15

Senior Year

Fall Semester			Spring Semester		
66-404	Computer Applications to		64-312	Managerial Economics	3
	Management	3	66-498	Business Policy	3
	Area II Elective	3	66-477	Information Systems	
	General Elective	3		Management	3
	General Elective	3		Management Information	
	General Elective (or ROTC)	3		Systems Elective*	3
				General Elective (or ROTC)	3
		15			15

*Management Information Systems Electives include:

- 92-365 Business Computer Programs
- 66-473 Operations Management III
- 66-478 Problems in Information Systems

Upper Division: Management Program (Marketing Emphasis)

Junior Year

Fall Semester			Spring Semester		
60-362	Business Law I	3	60-311	Managerial Accounting	3
66-321	Marketing Principles	3	64-307	Government and Business	3
66-331	Business Finance	3	66-326	Marketing Research	3
66-371	Operations Management I	3		Area I, II or III Elective	3
	General Elective	3		Area I, II or III Elective	3
		15			15

Senior Year

Fall Semester			Spring Semester		
	Marketing Elective*	3	64-312	Managerial Economics	3
	Marketing Elective*	3	66-423	Marketing Management	3
	Area II Elective	3	66-498	Business Policy	3
	General Elective	3		General Elective	3
	General Elective (or ROTC)	3		General Elective (or ROTC)	3
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*Marketing Electives include:

66-325 Advertising
 66-421 Purchasing & Materials Management
 66-422 Retailing
 66-425 Consumer Behavior

66-426 Sales Management
 66-428 International Marketing
 66-429 Special Topics in Marketing
 66-492 Physical Distribution Management

Upper Division: Management Program (Operations Management Emphasis)

Junior Year

Fall Semester

60-362 Business Law I	3
66-321 Marketing Principles	3
66-331 Business Finance	3
66-371 Operations Management I	3
General Elective	3
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Spring Semester

60-311 Managerial Accounting	3
64-307 Government and Business	3
Operations Management Elective	3
Area I, II or III Elective	3
Area I, II or III Elective	3
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Senior Year

Fall Semester

66-473 Operations Management III	3
Operations Management Elective*	3
General Elective	3
General Elective (or ROTC)	3
Area II Elective	3
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Spring Semester

64-312 Managerial Economics	3
66-498 Business Policy	3
66-474 Operations Management IV	3
General Elective	3
General Elective (or ROTC)	3
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*Operations Management Electives include:

66-372 Operations Management II
 66-404 Computer Applications to Management
 66-421 Purchasing & Materials Management

66-477 Information Systems Management
 66-492 Physical Distribution Management
 20-476 Statistical Quality Control
 66-475 Systems Analysis

Upper Division: Management Program (General Management Emphasis)

Junior Year

Fall Semester

60-362 Business Law I	3
66-321 Marketing Principles	3
66-331 Business Finance	3
66-371 Operations Management I	3
General Elective	3
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Spring Semester

60-311 Managerial Accounting	3
64-307 Government and Business	3
66-404 Computer Applications to Management	3
Area I, II or III Elective	3
Area I, II or III Elective	3
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Senior Year

Fall Semester

66-431 Financial Management	3
66-471 Analytical Methods in Management	3
General Elective	3
General Elective (or ROTC)	3
Area II Elective	3
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Spring Semester

64-312 Managerial Economics	3
66-498 Business Policy	3
66-423 Marketing Management	3
66-472 Organizational Development	3
General Elective (or ROTC)	3
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Industrial Management Program

The industrial management curriculum combines all the elements of a program in operations management with a basic foundation in engineering. The first two years provide a sound education in English, mathematics, the physical sciences, mechanical engineering, economics, accounting, and statistics. The junior and senior years are devoted to professional business courses, a program in operations management, and selected mechanical and electrical engineering courses. The Industrial management graduate is equipped to assume managerial and administrative responsibilities in technologically-oriented firms through the management of complex production activities or the marketing of specialized mechanical or electrical equipment.

COURSE OF STUDY FOR INDUSTRIAL MANAGEMENT

Freshman Year

Fall Semester		Spring Semester	
64-201 Economics I	3	64-202 Economics II	3
42-101 College Writing	3	42-102 College Writing & Literature	3
92-131 Calculus B-I	4	92-132 Calculus B-II	4
22-201 Graphics	1	95-142 Concepts of Physics I	3
95-141 Introductory Physics	3	96-144 Fundamentals of Experimental Physics II	1
96-141 Fundamentals of Experimental Physics I	1	39-200 Physical Education	1
39-100 Physical Education	1		
	16		15

Sophomore Year

Fall Semester		Spring Semester	
60-201 Accounting I	3	60-202 Accounting II	3
84-121 Chemical Principles	3	84-122 Chemical Principles	3
84-123 Chemical Principles Lab	1	84-124 Chemical Principles Lab	1
92-231 Calculus B-III	4	64-211 Statistics I	3
95-243 Concepts of Physics II	2	42-111 Technical and Business Communications	3
96-245 Fundamentals of Experimental Physics III	1	92-232 Calculus B-IV	4
22-271 Machine Tool Lab	1		
	15		17

Junior Year

Fall Semester		Spring Semester	
66-321 Marketing Principles	3	92-242 Electronic Data Processing	3
66-331 Business Finance	3	20-476 Statistical Quality Control	3
66-371 Operations Management I	3	22-372 Strength of Materials	3
64-212 Statistics II	3	Area I, II or III Elective	3
22-315 Applied Mechanics	3	College of Management Science	
22-377 Elements of Materials Science	2	Elective	3
	17		15

Senior Year

Fall Semester		Spring Semester	
92-381 Operations Research I	3	66-474 Operations Management IV	3
66-404 Computer Applications to Management	3	66-498 Business Policy	3
66-451 Personnel Management	3	92-382 Operations Research II	3
or	3	22-344 Heat and Power	3
66-253 Organizational Behavior		Area I, II or III Elective	3
16-290 Industrial Electronics	3		
or			
16-348 Basic Electrical Engineering Concepts			
Area I, II or III Elective	3		
College of Management Science			
Elective	3		
	18		15

FACULTY OF THE COLLEGE OF MANAGEMENT SCIENCE

DEAN OF THE COLLEGE

Daniel E. Diamond, A.B.; M.B.A.; Ph.D.

DEPARTMENT CHAIRPERSONS

Gerald F. Downey, B.S.; M.B.A.; M.A.; Ph.D.; Accounting.

S. Brackson Hinchey, A.B.; M.A.; Ph.D.; Management.

Carol C. McDonough, B.A.; M.A.; Ph.D.; Economics.

RESIDENT FACULTY

Jack D. Alexander, Associate Professor, Management; B.S., University of Notre Dame; M.B.A., Harvard Business School; M.A., M.A., Ph.D., University of Notre Dame.

William J. Burke, Professor, Accounting; B.A., University of Massachusetts; M.Ed., Boston State College; J.D., Suffolk Law School.

John D. Carrigg, Assistant Professor, Accounting; B.S., Suffolk University; M.S., Bentley College; C.P.A., Massachusetts.

Albert M. Cederlund, Associate Professor, Economics; A.B., Clark University; M.S., Columbia University; Ph.D., Clark University.

Samuel Chesler, Assistant Professor, Accounting; B.S., Boston University; M.B.A., Suffolk University.

William G. Conroy, Jr., Adjunct Associate Professor, Management; B.A., American International; M.Ed., Ph.D., University of Massachusetts.

Leslie M. Dawson, Professor, Management; B.B.A., Iona College; M.A. University of Toledo; Ph.D., Michigan State University.

George C. Dery, Associate Professor, Economics; A.B., Merrimack College; M.A., Boston College.

Daniel E. Diamond, Professor, Economics; A.B., University of Massachusetts; M.B.A., Boston University; Ph.D., New York University.

Gerald F. Downey, Professor, Accounting; B.S., M.B.A., Northeastern University; M.A., Ph.D., Boston College.

Charles F. Feeney, Associate Professor, Accounting; B.S., Boston College; M.B.A., Northeastern University; C.P.A., Massachusetts.

Winship C. Fuller, Assistant Professor, Management; Sc.B., Suffolk University; M.A., Ph.D., Tufts University.

Susan A. Goodwin, Associate Professor, Economics; B.A., Wellesley College; M.A., Boston University; Ph.D., Tufts University.

Edward Gurry, Assistant Professor, Accounting; B.S., Boston College; M.Ed., Boston State College; M.P.A., Georgia State University.

Brooke Hargreaves-Heald, Assistant Professor, Accounting; B.A., Brandeis University; J.D., Northeastern University.

Richard C. Healy, Jr., Assistant Professor, Economics; B.S., American International College; M.A., University of Massachusetts.

Marianne Hill, Instructor, Economics; B.S., University of Maryland; M.Sc., London School of Economics; M.Phil., Yale University.

Brackston Hinchey, Associate Professor, Management; A.B., M.A., Ph.D., College of Business and Public Administration, University of Missouri.

Russell R. Karl, Assistant Professor, Accounting; B.S., Bryant College; M.S., Suffolk Law School.

M. Riaz Khan, Assistant Professor, Management; B.S., M.S., University of Karachi; M.A., M.B.A., Ph.D., State University of New York (Buffalo).

Linda H. Kistler, Professor, Accounting; B.S., M.S., Colorado State University; C.P.A., Massachusetts.

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Goang-Tzer Liaw, Assistant Professor, Management; B.A., National Taiwan University; M.A., University of Minnesota; Ph.D., University of Illinois (Urbana).

Thomas G. Macbeth, Professor, Economics; A.B., Cornell University; M.A., Ph.D., University of Southern California.

Stuart L. Mandell, Commonwealth Professor, Management; B.A., Brooklyn College; M.B.A., Syracuse University.

Carol C. McDonough, Professor, Economics; B.A., Marymount Manhattan College; M.A., Ph.D., Boston College.

Richard O. Michaud, Assistant Professor, Management; B.A., Northeastern University; M.A., University of Pennsylvania; M.A., Ph.D., Boston University.

James P. Monahan, Associate Professor, Management; B.S., B.A., Boston College; Ph.D., Columbia University.

Thomas Murphy, Associate Professor, Management; A.B., Boston College; M.B.A., Harvard Graduate School of Business.

William Murphy, Assistant Professor, Accounting; B.S., Merrimack College; M.A., University of Rhode Island.

Robert Obutelewica, Assistant Professor, Economics; B.S., B.A., Carson Newman College; M.A., Ph.D., University of Massachusetts.

Santo J. Pullara, Professor, Management; B.S., M.B.A., J.D., Ph.D., Syracuse University.

Hak K. Pyo, Assistant Professor, Economics; B.S., Seoul National University, Korea; Ph.D., Clark University.

Ralph A. Rieth, Jr., Assistant Professor, Management; A.B., Dartmouth College; M.B.A., Ph.D., University of Massachusetts.

Joseph R. Rocha, Jr., Associate Professor, Management; B.S., Northeastern University; M.B.A., New York University; J.D., Howard University; Ph.D., University of Iowa.

Charles L. Saccardo, Assistant Professor, Economics; B.S., Northeastern University; M.A., Georgetown University.

Ernesto Sanz, Assistant Professor, Economics; B.A., Loyola University (Spain); M.A., Kamakura Language College (Japan); M.A., Sophia University (Japan); Ph.D., Boston College.

Irwin A. Shapiro, Associate Professor, Management; B.S., Syracuse University; M.B.A., Indiana University; M.A., Ph.D., Clark University.

Paul E. Snoonian, Associate Professor, Economics; B.S., M.B.A., Northeastern University; M.A., Ph.D., Michigan State University.

Richard Solano, Assistant Professor, Accounting; B.S., M.S., Bentley College; C.P.A., Massachusetts.

Frederic Joseph Thomas, Instructor, Management; B.S., U.S. Naval Academy; M.M.S., Lowell Technological Institute.

Charles F. Thompson, Assistant Professor, Accounting; B.S.A., Bentley College; M.B.A., Northeastern University; C.P.A., Massachusetts.

George J. Toscano, Professor, Accounting; B.S., M.B.A., Northeastern University; C.P.A., Massachusetts.

Daniel A. Verreault, Assistant Professor, Accounting; B.A., University of Massachusetts; M.S., Northeastern University; C.P.A., Massachusetts.

Charles V.A. White, Assistant Professor, Economics; B.A., M.S., University of Connecticut; Ph.D., Ohio State University.

Louis E. Yelle, Associate Professor, Management; B.S., Lowell Technological Institute; M.S., M.B.A., Northeastern University.

James A. Zeitler, Instructor, Economics; B.A., Gannon College.

ADJUNCT FACULTY

Richard Fristensky, Economics; B.S., St. Peter's College; M.A., Boston College.

David Lyall, Accounting; M.B.A., University of Strathclyde (Scotland); M.Litt., Heriot-Watt University (Scotland).

Luis G. Mosquera, Venezuelan Program; D.St., Central University of Venezuela.

Pedro L. Venegas, Venezuelan Program; B.A., Andres Catholic University (Venezuela); M.B.A., University of Michigan.

VISITING LECTURERS

Miller Graf, Management; B.A., Boston University; M.B.A., University of Massachusetts.

Francis T. Noonan, Management; B.S., M.B.A., Boston College.

David O'Brien, Accounting; B.S.A., Bentley College.

Edward J. Parlee, Management; B.S., Lowell Technological Institute; M.Ed., Lowell State College; M.B.A., Babson College.

Kevin J. Perry, Management; B.S.B.A., Lowell Technological Institute; M.B.A., Boston University.

Lan T. Pho, Management; B.S.Bus.Ed., Illinois State University; M.B.A., Ohio University.

Charles Renneer, Accounting; B.S., Miami University (Ohio).

Khosrow Shakoori, Economics; B.A., Institute of Advanced Accounting (Iran); M.B.A., Bryant College.



COLLEGE OF MUSIC

Thomas G. Elliot, Dean

It is the philosophy of the College of Music that every graduate, regardless of area of concentration or personal goal, must be both an educated person and a qualified musician. The study of music involves the development of the intellect, the acquisition of an aesthetic and philosophical comprehension of the art of music, and, in the case of recipients of professional degrees, a high level of proficiency in a chosen performance medium. The particular degree program which a student may select will depend, of course, upon his or her personal objectives and individual competencies. The Bachelor of Music programs are professional in nature and seek to develop that high degree of musicianship which is fundamental to creative, scholarly and educational practice in music. The Bachelor of Arts program, on the other hand, is appropriate for students with a general interest in music, or with interests in other academic disciplines as well as music.

OBJECTIVES OF THE COLLEGE OF MUSIC

The objectives of the College of Music are to provide each student with the opportunity to master the fundamental knowledge upon which all music is based, to obtain the special and technical knowledge related to one or more of the various branches of music, to develop an understanding and an appreciation of the cultural and social heritage of musical experience, and to appreciate that one's personal education is a lifetime process to be pursued in both formal and informal environments. The faculty of the College of Music believe that each recipient of a baccalaureate degree in music, regardless of personal goal, should be a qualified musician, and it is to this end that all undergraduate programs are directed. Additionally, the program in music education seeks to prepare professional personnel for teaching and leadership positions in a variety of educational levels, to contribute to the development of institutional organizations, arrangements, and service systems concerned with the teaching of music, and to provide leadership in effecting planned change in music programs at all levels of public education.

COLLEGE ORGANIZATION & GOVERNANCE

The College of Music is organized into two departments and is administered by a Dean. Each department is responsible for developing its course offerings and programs of study, and the music faculty, as a whole, is responsible for all academic policies of the College. The Academic Standards Committee is responsible for enforcing the academic standards of the College and also serves as a review body for suspended students seeking readmission with probationary status. Specific matters pertaining to Applied Music and Music Education are referred, respectively, to the Committee of Applied Music Area Heads and the Music Education Committee.

Academic Standards Committee

Artin S. Arslanian
Thomas G. Elliot
Paul L. Gayzagian
Antone S. Holevas
John K. Ogasapian

Music Education Committee

Ruth Ashley
Paul L. Gayzagian
William Pordon
Rawn Spearman

Heads of Music Areas

Artin S. Arslanian, Theory
Donald Bravo, Woodwinds
Paul L. Gayzagian, Music Education
Calvin Lindblad, Keyboard
Ivan Oak, Voice
Natalo Paella, Brass & Percussion
William Pordon, Strings

BACCALAUREATE DEGREE PROGRAMS

The College of Music offers undergraduate programs leading to the degree of Bachelor of Arts and to the professional degree of Bachelor of Music. For details concerning graduate music programs, see the *Graduate School Catalogue*.

Bachelor of Arts Degree

The Bachelor of Arts degree is intended for the student who has a general interest in music and wishes to secure a broad, comprehensive education or desires to combine his or her music studies with some other major or minor academic field. The requirements for majors are set by university departments but must specify a minimum of 30 semester credits. Although students may not be required to take more than 45 semester credits in the major field, they may elect to take additional courses in the major field beyond the specified required maximum. At least 15 credits in the major field must be taken at the upper-division course level. Bachelor of Arts degree programs require a minimum of 75 semester credits outside the major field, except as specified by provisions concerning second majors.

Music majors who are candidates for the Bachelor of Arts degree in the College of Music may elect a second major which is offered by other colleges of the University. Students who elect academic majors in more than one college are candidates for one degree only, and they are considered to be degree candidates in the college of their initial major unless they indicate to the contrary at the time they make a declaration of second major by filing for intercollegiate transfer. Accordingly, a student who pursues a music major in the College of Music and a second major in another college is subject to all degree requirements as specified by the College of Music and is subject only to major course requirements (including any collateral and prerequisite courses for the major) as specified by the department of his or her second major. For a full discussion of University requirements concerning second majors, students should consult the applicable section of this publication which appears under the heading "Academic Policies."

In accordance with the requirements of established minor programs, music majors who matriculate for the degree of Bachelor of Arts may undertake a minor which is offered by another college of the University. Students who are interested in such programs should refer to the appropriate chapters which detail the programs of other colleges.

Music majors who do not desire second majors or minor programs may complete their Bachelor of Arts requirements through a program of elective courses. Such elective programs may not be taken in the College of Music and must be approved by the student's faculty advisor. When presented in fulfillment of collateral degree requirements without a second major or a minor, the program of elective courses must include at least 6 credits of courses which are on or above the 300 course level.

Bachelor of Music Degree

The Bachelor of Music degree is offered in four areas of specialization: music education, music history and literature, music theory and composition, and performance. The music education specialization is designed to prepare teachers and supervisors of music in the elementary and secondary schools. The specializations in music history and literature, music theory and composition, and performance provide abundant opportunities for individual performance, research and creativity to students who wish professional careers in music. Programs combining two areas of specialization, e.g., music education/performance, are also available. A student desiring to pursue such a combined course of study must satisfy the requirements in both areas and should plan to spend one or more semesters in residence beyond the normal eight semesters of full-time study which are required for the successful completion of a program with a single area of specialization.

Individual and group performances are important aspects of all Bachelor of Music programs, but students in the performance specialization are required to demonstrate outstanding ability as performers in order to satisfy admission and retention standards. Students specializing in music history and literature and in music theory and composition must demonstrate similar outstanding abilities in their chosen fields in order to satisfy admission and retention standards. Students preparing for admission to the music education specialization are required to select applied music courses each semester for maintaining and developing their music skills, and they are expected to develop minimum standards of performance in piano and in their areas of performance emphasis. The music education specialization is subject to the same rules and regulations as those which govern all teacher education programs of the University. All Bachelor of Music candidates must participate in one or more ensembles during each semester of their residence. All Bachelor of Music candidates are expected to reach a level of proficiency which merits faculty permission to perform in public recital.

The curricula for all areas of specialization for the degree of Bachelor of Music are divided into four main course groupings. Satisfactory completion of a degree program must include, as a minimum, the acquisition of the specific number of semester credits in each group.

1. General Musicianship	66
Harmony I, II, III, IV	12
Solfege I, II, III, IV	12
Survey of Music History I & II	6
Conducting I & II	2
Keyboard (Introduction to Keyboard or Keyboard Accompanying)	2
Applied Music	16
Ensembles	16
2. University Core Requirements	35
3. Music Electives	14
Two advanced three-credit courses in music theory or music history and literature	6
Eight one-credit courses from among area offerings in music	8
4. Specialization	24
Completion of specified courses in one of the four areas of specialization	
5. Minimum audit requirements	139
The above requirements are incorporated in the several programs of study for the Bachelor of Music degree which appear on the following pages.	

GENERAL COLLEGE REQUIREMENTS

In order to qualify for a baccalaureate degree offered by the College of Music, undergraduates must comply with the University Core Requirements, must conform to the rules of the College of Music which govern degrees and major studies for such degrees, and must earn a 2.00 average in their major concentrations or specializations by the end of the senior year. (Additional requirements are specified for retention in the music education program.) Students who have failed to achieve a 2.00 average in their major concentrations or specializations by the end of the junior year have not made satisfactory progress toward their degrees, and upon the recommendation of appropriate departmental committees and the concurrence of the Academic Standards Committee of the College, such students may be placed on probationary status in the College or dismissed from the University for inadequate scholarship.

Language Proficiency

The College of Music does not specify a level of language proficiency as a formal requirement for degrees; however, students who anticipate graduate work in such areas as music history and literature are encouraged to develop proficiency during their undergraduate enrollment. Students who desire to present official evidency of language proficiency for purposes of employment or application to graduate school should consult policies listed elsewhere in this publication under the heading "Academic Policies: Language Requirement" for a listing of avenues by which certification of language proficiency may be pursued.

Declaration of Major

Students enrolled in the College of Music of necessity are committed to pursue one of the established music programs. Admission to major specializations of the Bachelor of Music degree is governed by specific achievement standards which are described under the several specialization headings. In any event, all students are required to file specific declarations of major with the Office of the Registrar no later than the beginning of their junior year. Students enrolled in other colleges who wish to elect a second major in music which is offered by the College under requirements for the Bachelor of Arts degree must secure the approval of the chairperson of the Department of Academic Studies prior to making such a declaration and must file the appropriate University form with the Office of the Registrar no later than the end of the freshman year.

Change of Major

Bachelor of Arts degree candidates in the College of Music may not drop the music major without withdrawing from the University, transferring to another college of the University, or changing their degree program in the College. Students who wish to change their major from music to another major must file for intercollegiate transfer within the University. (Cf. below.) Students who wish to make a change of program from the Bachelor of Arts to the Bachelor of Music degree must secure the approval of the appropriate Chairperson. All such changes of program require that the form for declaration of major or change of major be filed with the Office of the Registrar. Students who are candidates for the Bachelor of Music degree may change their areas of specialization when they have received the permission of the appropriate Chairperson.

Transfer Policies

Students transferring to the College of Music from other colleges of the University or from other institutions may expect recognition of previously completed courses if these are equivalent to those which are specified by curricula of the College. Students who wish to apply for transfer or for intercollegiate transfer to the College of Music are required to achieve satisfactory scores on written tests of musical aptitude and basic music theory which are developed and administered by the College of Music. Students wishing to transfer to Bachelor of Music programs are required to demonstrate their vocal or instrumental ability during a jury examination before a committee of the faculty of the College.

Transfer from Other Institutions

Courses which are transferred from other institutions are initially evaluated by the Office of Admissions in terms of general University requirements. In addition, courses which are presented for transfer are evaluated by professional departments in terms of college and program requirements at the time a student is accepted for matriculation in the College of Music. Courses which are transferred to the University under provisions of the Massachusetts Transfer

Compact and which are not creditable to requirements of the College of Music or as unrestricted elective courses will be listed on the student's permanent record card but will not apply to the minimum degree requirements. In the event that a student who has transferred to the University under the Massachusetts Transfer Compact subsequently makes an intercollegiate transfer to the College of Music, all previously completed courses, including transferred courses from the compact institution, will be reevaluated in terms of their applicability to degree requirements of the College of Music.

Repetition of Transferred Courses

A student who has been granted transfer credit, and on that basis has been assigned to advanced courses for which the transferred course is a prerequisite, may be advised to repeat such transferred work at the University or to take a more elementary course than that which has been transferred when the competence of the student has been demonstrably inadequate. Permission to repeat a transferred course is granted by filing an academic petition form with the office of the College dean. Since credit may not be granted more than once for the completion of any course, a condition for filing such a petition is the simultaneous filing of a request to revoke recognition of the previously transferred course.

Intercollegiate Transfer to the College of Music

Students wishing to transfer from another college of the University must file a petition, together with a transcript of their permanent record cards, with the appropriate department chairperson and the Dean of the College of Music by November 1 for spring semester transfer and by April 1 for fall semester transfer. Students are referred to University policies concerning intercollegiate transfer which appear elsewhere in this publication under the heading "Academic Policies: Change of Major with Intercollegiate Transfer" for further procedural details. Records of students who are approved for transfer are reviewed by the Office of the Dean and, irrespective of grades previously received in other college programs, all courses which may not be applied to college or program requirements are deleted from the student's cumulative grade-point average.

Ordinarily, students may not transfer into programs of the Bachelor of Music degree from other programs of the University; however, such transfer may be permitted for the unusually gifted student early in his or her academic career. Students who make such a transfer may expect to extend their period of study beyond the normal eight semesters.

Applied Music

All students other than performance majors must successfully complete eight semesters of applied music on their principal instrument, earning no less than 16 credits toward graduation. Each panel evaluation will be accompanied by a studio grade.

Recital Policies

It is an honor to receive permission to perform a public recital. All students may receive permission to perform a public recital in lieu of the normal evaluation procedure if recommended to do so by the studio teacher, the Committee of Area Heads, and the chairperson of the Performance Department. The Recital Permission Form, obtained at the music office, must be submitted no later than November 15 in the fall semester and March 15 in the spring semester. In addition, all seniors are expected to reach the plateau upon which permission is granted to perform a public recital for 72-414. If such permission is not granted, an evaluation by a faculty panel will be administered. University Concert Hour performance is expected for all Performance majors each semester.

Ensemble Requirements

Students whose major areas of performance are *voice, brass, wind, string and percussion* must participate satisfactorily in the major ensemble program of their area, earning a minimum of sixteen credits as required by their specializations, and must participate in the major ensemble program during each semester of residence, regardless of total credits accrued.

Students whose major areas of performance are *piano, organ, accordion, and guitar* must participate satisfactorily in some aspect of the ensemble program, earning a minimum of sixteen credits as required by their specialization, and must participate in the ensemble program during each semester of residence, regardless of total credits accrued. Under some circumstances, students may petition the Chairperson of the Department of Performance for permission to substitute music electives as partial fulfillment of the ensemble requirement. Under no circumstances may such a student earn less than twelve ensemble credits.

Two Credit Vocal (72-210) and Instrumental (72-220) Ensembles

Two credit ensembles rehearse four hours a week, awarding two credits per semester. Placement in these ensembles is determined by a panel of conductors of the ensembles directly concerned. Students may express a preference, but final placement will be decided by the panel.

One Credit Vocal (72-110) and Instrumental (72-120) Ensembles

Single credit ensembles rehearse two hours a week awarding one credit per semester and are open to all music majors. Placement in small ensembles is determined by audition or by panel.

Workshop Chorus (72-110), Band (72-120), and Orchestra (72-120)

Workshop ensembles rehearse two hours a week awarding one credit per semester and are open to all music majors. Workshop ensembles are designed to give ensemble experience outside the students' principal areas of performance and are usually undertaken in conjunction with instrumental or voice classes and conducting.

Multiple Ensemble Participation

In addition to participating, as required, in the major ensemble program, music majors may participate in other ensembles if they meet established performance standards through audition. Students whose cumulative averages are below 2.5 may be prohibited from multiple participation in music ensembles.

DEPARTMENT OF ACADEMIC STUDIES

John Ogasapian, Chairperson

Professors: Artin Arslanian, Domenic Procopio

Associate Professors: Jacqueline Charette, Paul Gayzagian, John Ogasapian, Rawn Spearman

Assistant Professors: Ruth Ashley, Dean Bouzianis, Alma Espinosa, Paul Gay, W. Anne Trenkamp,

I. Stuart Smith

In cooperation with the Department of Performance, the Department of Academic Studies offers a major in music which leads to the Bachelor of Arts degree and Bachelor of Music degree specializations in music education, music history and literature, and music theory and composition. The Department also offers a minor area of study in music history and literature.

Music Major (Bachelor of Arts)

Music majors who matriculate for the degree of Bachelor of Arts must take 30-45 credits of course work in music.

The following courses must be completed by all candidates for the Bachelor of Arts degree:

Harmony I, II, III, IV: 71-101, 71-102, 71-201, 71-202;

Survey of Music History I, II: 74-261, 74-262.

The remaining courses of the major, up to a maximum of 45 credits,* may be selected from the offerings of the College of Music, the following courses of which are recommended:

71-305	Instrumentation	74-366	The Symphony
71-401	Harmony	74-461	Music of the Middle Ages
71-402	18th Century Counterpoint	74-462	Music of the Renaissance
71-405	Orchestration	74-463	Music of the Baroque
71-407	Electronic Music	74-464	Music of the Classic
74-363	History of Choral Music	74-465	Music of the Romantic
74-364	History of Opera	74-466	Twentieth Century Music
74-365	The Concerto		

*Students who elect to take more than 45 credits in music may not reduce the requirement of 75 credits outside the major. Music majors who elect a second major in another academic field may not count more than 63 credits in the two majors combined toward the minimum degree requirement of 120 credits.

Music Education (Bachelor of Music)

Students intending to pursue teaching careers in music may apply to the Head of Music Education at the end of the sophomore year for admission to the music education program. Such admission is made in accordance with regulations governing all teacher-education programs of the University. The semester deadlines for filing application are April 1 for the succeeding fall semester and November 1 for the succeeding spring semester. Students are urged to plan their programs of study so that they may file application for admission during the semester in which they complete course work for the sophomore year. Unless applicants have the permission of the Dean of the College of Music, they may file for admission to the music education program no later than the fifth semester of full-time study. Students who transfer to the College of Music with 60 or more semester credits should consult the Dean of the College concerning the schedule for submitting an application.

Students admitted to the College of Music as transfers may apply to the specialization in the normal manner provided that they have satisfied all requirements through transferred courses. Evaluation of such previous work shall be made by the Chairperson of the Department of Academic Studies in consultation with the Head of Music Education. Transfer students admitted to the College of Music from other institutions in which they were enrolled in teacher-education programs must comply with the admission requirements of the College of Music. Credit for courses in apprentice teaching may not be transferred from another institution. Application forms for admission to the music-education program may be secured from the music office.

The minimum requirements for admission to the music-education program are as follows:

1. satisfactory completion of no less than 60 credits, including all required courses in basic musicianship as specified by the program of studies for the music-education specialization;
2. a cumulative grade-point average of 2.50 or better for all courses taken in the University;
3. a minimum cumulative grade-point average of 2.50 for all course work transferred;
4. a cumulative grade-point average of 2.50 or better for all music courses, computed on the minimum number of credits as cited in paragraph 1 above; and
5. satisfactory evidence of effective English skills, with a grade of "C" or better in 42-101, 102 — College Writing.

Applicants for admission to the music-education program will be notified in writing of their acceptance or non-acceptance.

Students admitted to the music-education program will be evaluated at the end of each semester to determine their retention status. To be continued in the music-education program, the student must maintain a cumulative grade-point average of 2.50 for all course work; a 2.50 average for all required and elective courses which may be counted toward the degree requirements in music education; and a 2.50 average for all required courses in education, together with a grade of "C" or better in each course. Students who do not meet the academic requirements may not continue in the program, and their enrollment in it will be terminated. All such students will be informed in writing that they are ineligible to continue and will be prohibited from registering for further music education courses. They may, however, continue as degree candidates in a non-teaching field, provided that the requirements for admission to that field of specialization have been satisfied. No student will be admitted to courses in apprentice teaching who has not passed the required courses in music, or who has not evidenced within the clinical experiences of the curriculum and instruction courses those positive personal characteristics which are necessary for effectiveness in teaching.

Applicants who do not qualify for admission to music education and students who have been notified in writing that their enrollments in this program have been terminated may submit written petitions to the Music Education Committee for reviews of their records and for permission to reapply on the deadline established for the following semester. These petitions must be received by the

Committee no later than August 1 (for students who filed their initial applications by April 1 or who were disqualified at the end of the spring semester) or March 1 (for students who filed their initial applications by November 1 or who were disqualified at the end of the fall semester). Students may not petition the Committee more than once for permission to reapply. All decisions of the Committee in evaluating such petitions are final.

COURSE OF STUDY FOR MUSIC EDUCATION SPECIALIZATION

Freshman Year

Fall Semester			Area Preference			Spring Semester			Area Preference		
			V	K	O				V	K	O
71-101	Harmony I		3	3	3	71-102	Harmony II		3	3	3
71-103	Solfege I		3	3	3	71-104	Solfege II		3	3	3
72-113	Applied Music		2	2	2	72-114	Applied Music		2	2	2
72	Ensemble		2	2	2	72	Ensemble		2	2	2
72-131	Introduction to Keyboard		1		1	72-132	Introduction to Keyboard		1		1
72-133	Keyboard Accompanying			1		72-134	Keyboard Accompanying			1	
42-101	College Writing		3	3	3	42-102	College Writing		3	3	3
	UCR		3	3	3		UCR		3	3	3
39-101	Physical Education		1	1	1	39-102	Physical Education		1	1	1
			18	18	18				18	18	18

Sophomore Year

Fall Semester			Area Preference			Spring Semester			Area Preference		
			V	K	O				V	K	O
71-201	Harmony III		3	3	3	71-202	Harmony IV		3	3	3
71-203	Solfege III		3	3	3	71-204	Solfege IV		3	3	3
72-213	Applied Music		2	2	2	72-214	Applied Music		2	2	2
72	Ensemble		2	2	2	72	Ensemble		2	2	2
72-333	Conducting I		1	1	1	72-334	Conducting II		1	1	1
74-261	Survey of Music History I		3	3	3	74-262	Survey of Music History II		3	3	3
	Music Elective		1	1	1		Music Elective		1	1	1
	UCR		3	3	3		UCR		3	3	3
			18	18	18				18	18	18

Junior Year

Fall Semester			Area Preference			Spring Semester			Area Preference		
			V	K	O				V	K	O
	Music History or Theory Elective		3	3	3	73-351	Music in the Elementary School		3	3	3
72-313	Applied Music		2	2	2	01	Educational Foundations Course		3	3	3
72	Ensemble		2	2	2	73-451	Apprentice Teaching		6	6	6
	UCR		6	6	6		Elementary School		2	2	2
	Music Elective		4	4	4	72-314	Applied Music		2	2	2
						72	Ensemble		2	2	2
			17	17	17				16	16	16

Senior Year

Fall Semester			Area Preference			Spring Semester			Area Preference		
			V	K	O				V	K	O
73-353	Curriculum Development & Evaluation		3	3	3		Music History or Theory Elective		3	3	3
73-352	Music in the Secondary School		3	3	3		Music Elective		1	1	1
73-452	Apprentice Teaching					72-414	Applied Music		2	2	2
	Secondary School		6	6	6	72	Ensemble		2	2	2
72-413	Applied Music		2	2	2		UCR		9	9	9
72	Ensemble		2	2	2						
	Music Elective		1	1	1						
			17	17	17				17	17	17

Music History and Literature (Bachelor of Music)

Students who are interested in the program for Music History and Literature must make formal application to the Chairperson of the Department of Academic Studies between December 1 and April 1 of their sophomore year. Students applying to this program should evidence superior promise in the area.

Acceptance will be predicated on the following criteria:

- 1. an overall 2.5 cumulative in all courses;
- 2. a grade of at least 2.5 in College Writing (42-101, 42-102);
- 3. a cumulative average of at least 2.5 in freshman and sophomore Harmony (71-101, 71-102, 71-201) and Solfege (71-103, 71-104, 71-203)
- 4. a grade of 3.0 or better in Survey of Music History (74-261).

Upon acceptance in the area, the student is required to file a form for declaration of major with the Office of the Registrar. The appropriate form may be secured from the Registrar and must be returned to this office after the required signatures have been obtained through the Chairperson of the Department of Academic Studies.

Students transferring to the College and wishing to specialize in the area of Music History and Literature must comply with the requirements for admission to this degree program in the College of Music and must satisfy the basic music course requirement, either through lower level courses in the College of Music or through courses taken at another institution of higher learning.

Students in Music History and Literature must complete a thesis during their senior year. The thesis must demonstrate ability to do formal research at a basic level and to organize and present the results of that research in proper form. The thesis is undertaken as a part of 74-469 Musicology and Research, and is directed by a member of the Music History faculty.

COURSE OF STUDY FOR MUSIC HISTORY AND LITERATURE SPECIALIZATION

Freshman Year

Fall Semester		Area Preference			Spring Semester		Area Preference		
		V	K	O			V	K	O
71-101	Harmony I	3	3	3	71-102	Harmony II	3	3	3
71-103	Solfege I	3	3	3	71-104	Solfege II	3	3	3
72-113	Applied Music	2	2	2	72-114	Applied Music	2	2	2
72	Ensemble	2	2	2	72	Ensemble	2	2	2
72-131	Introduction to Keyboard	1		1	72-132	Introduction to Keyboard	1		1
72-133	Keyboard Accompanying		1		72-134	Keyboard Accompanying		1	
42-101	College Writing	3	3	3	42-102	College Writing	3	3	3
	UCR	3	3	3		UCR	3	3	3
39-101	Physical Education	1	1	1	39-102	Physical Education	1	1	1
		18	18	18			18	18	18

Sophomore Year

Fall Semester

71-201	Harmony III	3	3	3
71-203	Solfege III	3	3	3
72-213	Applied Music	2	2	2
72	Ensemble	2	2	2
74-261	Survey of Music			
	History I	3	3	3
	Music Elective	1	1	1
	UCR	3	3	3
		<u>17</u>	<u>17</u>	<u>17</u>

Spring Semester

71-202	Harmony IV	3	3	3
71-204	Solfege IV	3	3	3
72-214	Applied Music	2	2	2
72	Ensemble	2	2	2
	UCR	3	3	3
	Music Elective	1	1	1
74-262	Survey of Music			
	History II	3	3	3
		<u>17</u>	<u>17</u>	<u>17</u>

Junior Year

Fall Semester

74-361	Music of the Middle			
	Ages	3	3	3
74-362	Music of the Renaissance	3	3	3
72-313	Applied Music	2	2	2
72	Ensemble	2	2	2
	UCR	3	3	3
	Music Theory Elective	3	3	3
72-333	Conducting I	1	1	1
		<u>17</u>	<u>17</u>	<u>17</u>

Spring Semester

74-363	Music of the Baroque	3	3	3
74-364	Music of the Classic	3	3	3
72-314	Applied Music	2	2	2
72	Ensemble	2	2	2
	UCR	3	3	3
	Music Theory Elective	3	3	3
72-334	Conducting II	1	1	1
	Music Elective	1	1	1
		<u>18</u>	<u>18</u>	<u>18</u>

Senior Year

Fall Semester

74-364	Music of the Romantic	3	3	3
74-468	Musicology & Research I	3	3	3
72-413	Applied Music	2	2	2
72	Ensemble	2	2	2
	UCR	6	6	6
	Music Elective	1	1	1
		<u>17</u>	<u>17</u>	<u>17</u>

Spring Semester

74-366	Music of the 20th			
	Century	3	3	3
74-469	Musicology &			
	Research II	3	3	3
72-414	Applied Music	2	2	2
72	Ensemble	2	2	2
	UCR	3	3	3
	Music Elective	4	4	4
		<u>17</u>	<u>17</u>	<u>17</u>

Music Theory and Composition (Bachelor of Music)

Students who are interested in the program for Music Theory and Composition must make formal application to the Head of the Theory-Composition faculty between December 1 and April 1 of their sophomore year. Students applying for admission to this program should evidence superior promise in the area. Acceptance will be predicated on the following criteria: (1) a cumulative average of 3.0 in freshman and sophomore Harmony (71-101, 71-102, 71-201) and Solfege (71-103, 71-104, 71-203); and (2) a cumulative average of 2.5 in all music courses attempted up to the time of application.

The candidate must request a letter of evaluation from his/her instructor in the areas of Harmony and Solfege. Instructors will forward such letters to the Head of the Theory-Composition Faculty, who will, in turn, present the candidate's application and the supporting documentation to the faculty of the area for consideration. Upon acceptance in the area, the student is required to file a form for declaration of major with the Registrar. The appropriate form may be secured from the Registrar and must be returned to this office after the required signatures have been obtained through the Chairperson of the Department of Academic Studies.

Students transferring to the College and wishing to specialize in the area of Music Theory and Composition must comply with the requirements for admis-

sion to the degree program as set forth above and must satisfy the basic music course requirement, either through lower level courses of the College of Music or of another accredited institution of higher education.

Students in the music theory and composition program must present a public performance of at least one instrumental composition of their own, lasting six to eight minutes. This composition must be for a chamber ensemble which may or may not include keyboard and/or voice(s). The work should be representative of the candidate's ability to use more than one instrument soloistically. Acceptable media include woodwind quintet, string quartet, mixed groups of instruments, chorus with instrumental accompaniment, or brass or string ensemble. Students must make all necessary arrangements for procuring recital facilities and for rehearsing and conducting their compositions. Arrangements are to be made in consultation with the theory-composition faculty.

In addition, theory and composition majors must present to the theory-composition faculty, by April 15 of their senior year, a portfolio containing the following: (1) a piece for full orchestra, (2) a work for chamber ensemble, and (3) an approved piece in an optional idiom.

Among the movements in the pieces submitted there should be (1) a movement in sonata form, and (2) a theme with at least five variations.



MUSIC THEORY AND COMPOSITION SPECIALIZATION

Freshman Year

Fall Semester		Area Preference			Spring Semester		Area Preference		
		V	K	O			V	K	O
71-101	Harmony I	3	3	3	71-102	Harmony II	3	3	3
71-103	Solfege I	3	3	3	71-104	Solfege II	3	3	3
72-113	Applied Music	2	2	2	72-114	Applied Music	2	2	2
72	Ensemble	2	2	2	72	Ensemble	2	2	2
72-131	Introduction to Keyboard	1		1	72-132	Introduction to Keyboard	1		1
72-133	Keyboard Accompanying		1		72-134	Keyboard Accompanying		1	
42-101	College Writing	3	3	3	42-102	College Writing	3	3	3
	UCR	3	3	3		UCR	3	3	3
39-101	Physical Education	1	1	1	39-102	Physical Education	1	1	1
		18	18	18			18	18	18

Sophomore Year

Fall Semester					Spring Semester				
		V	K	O			V	K	O
71-201	Harmony III	3	3	3	71-202	Harmony IV	3	3	3
71-203	Solfege III	3	3	3	71-204	Solfege IV	3	3	3
72-213	Applied Music	2	2	2	72-214	Applied Music	2	2	2
72	Ensemble	2	2	2	72	Ensemble	2	2	2
	UCR	3	3	3		UCR	3	3	3
	Music Elective	1	1	1		Music Elective	1	1	1
72-261	Survey of Music History I	3	3	3	72-262	Survey of Music History II	3	3	3
		17	17	17			17	17	17

Junior Year

Fall Semester					Spring Semester				
		V	K	O			V	K	O
71-305	Instrumentation	3	3	3	71-405	Orchestration	3	3	3
71-401	Harmony V	3	3	3	71-402	18th Century Counterpoint	3	3	3
72-313	Applied Music	2	2	2	72-314	Applied Music	2	2	2
72	Ensemble	2	2	2	72	Ensemble	2	2	2
	UCR	3	3	3		UCR	3	3	3
	Music History Elective	3	3	3		Music History Elective	3	3	3
72-333	Conducting I	1	1	1	72-333	Conducting II	1	1	1
		17	17	17		Music Elective	1	1	1
							18	18	18

Senior Year

Fall Semester					Spring Semester				
		V	K	O			V	K	O
71-408	Composition I	3	3	3	71-407	Electronic Music	3	3	3
71-406	20th Century Techniques	3	3	3	71-409	Composition II	3	3	3
72-413	Applied Music	2	2	2	72-414	Applied Music	2	2	2
72	Ensemble	2	2	2	72	Ensemble	2	2	2
	UCR	6	6	6		UCR	3	3	3
	Music Elective	1	1	1		Music Elective	4	4	4
		17	17	17			17	17	17

Music History and Literature Minor

Students matriculating for degrees in other colleges of the University and possessing a fundamental knowledge of music may pursue a minor area of study in music history and literature upon the approval of the Chairperson of the Department of Academic Studies. A minor area of study in music history and literature consists of 18-24 semester credits as approved by a member of the music-history faculty. At least 6 credits of the minor must be elected in courses at the 300 level or higher.





DEPARTMENT OF PERFORMANCE STUDIES

Antone Holevas, Chairperson

Professor: Willis Traphagan

Associate Professors: Donald Bravo, Antone Holevas, Natalo Paella, William Pordon

Assistant Professors: Calvin Lindblad, Anthony Mele, Ivan Oak, Kay Roberts, J. Alan Whiston,
Robert White

The Department of Performance offers a specialized major in performance leading to the degree of Bachelor of Music.

Performance (Bachelor of Music)

Students wishing to major in performance may apply to the Chairperson of the Department of Performance, subject to the following requirements:

Application for Performance Specialization

1. Admission is limited to upperclassmen;
2. Application forms are available at the music office and must be submitted to the Chairperson of the Department of Performance no later than December 1 for fall auditions, May 1 for spring auditions, and August 15 for summer auditions;
3. Written recommendations of the applied teacher and the appropriate area head must be submitted to the chairperson of the Department of Performance by December 6 for fall, May 6 for spring, and August 21 for summer.

Admission Requirements

1. Honor grades are required in all applied and ensemble courses;
2. A minimum of thirty music credits is required and must include credit for the following courses:
 - Applied Music — 72-113, 114;
 - Keyboard — 72-131, and 132 or 133, and 134;
 - Harmony, Solfege — 71-101, 102, 103, 104; and
 - Ensemble: — 2 semesters;
3. A successful audition is required, the repertoire of which is developed in consultation with the appropriate area head.

Retention in Performance Specialization

1. Honor grades in all performance specialization courses and ensembles are required;
2. Continued full-time enrollment in the prescribed curriculum is required;
3. Recitals are required after completion of basic music courses:
 - a. A junior recital is required during the semester in which 72-316 is completed; and
 - b. A senior recital is required during the semester in which 72-416 is completed;
4. Appearance in the University Concert Hour is required during each semester of residency.

Appeals Procedure

Students whose enrollments are terminated in the performance program may submit written petitions to the Committee of Applied Music Area Heads for readmission. All decisions of the Committee in evaluating such petitions are final.

PERFORMANCE SPECIALIZATION

Freshman Year

Fall Semester		Area Preference			Spring Semester		Area Preference		
		V	K	O			V	K	O
71-101	Harmony I	3	3	3	71-102	Harmony II	3	3	3
71-103	Solfege I	3	3	3	71-104	Solfege II	3	3	3
72-113	Applied Music	2	2	2	72-114	Applied Music	2	2	2
72	Ensemble	2	2	2	72	Ensemble	2	2	2
72-131	Introduction to Keyboard	1		1	72-132	Introduction to Keyboard	1		1
72-133	Keyboard Accompanying		1		72-134	Keyboard Accompanying		1	
42-101	College Writing	3	3	3	42-102	College Writing	3	3	3
	UCR	3	3	3		UCR	3	3	3
39-101	Physical Education	1	1	1	39-102	Physical Education	1	1	1
		18	18	18			18	18	18

Sophomore Year

Fall Semester					Spring Semester				
		V	K	O			V	K	O
71-201	Harmony III	3	3	3	71-202	Harmony IV	3	3	3
71-203	Solfege III	3	3	3	71-204	Solfege IV	3	3	3
72-215	Applied Music	4	4	4	72-216	Applied Music	4	4	4
72	Ensemble	2	2	2	72	Ensemble	2	2	2
74-261	Survey of Music History I	3	3	3	74-262	Survey of Music History II	3	3	3
	UCR	3	3	3		UCR	3	3	3
		18	18	18			18	18	18

Junior Year

Fall Semester					Spring Semester				
		V	K	O			V	K	O
71-303	Solfege V	3	3	3	72-316	Applied Music	4	4	4
74-459	Performance Practice	3	3	3	72-418	Research in Performance	3	3	3
72-315	Applied Music	4	4	4	72-334	Conducting II	1	1	1
72-333	Conducting I	1	1	1		Music History or Music Theory Elective	3	3	3
	UCR	3	3	3		UCR	3	3	3
	Music Elective	2	2	2	72	Ensemble	2	2	2
72	Ensemble	2	2	2		Music Elective	2	2	2
		18	18	18			18	18	18

Senior Year

Fall Semester					Spring Semester				
		V	K	O			V	K	O
72-415	Applied Music	4	4	4	72-416	Applied Music	4	4	4
	Music History or Music Theory Elective	3	3	3	72-418	Research in Performance	3	3	3
	UCR	6	6	6		Music Elective	2	2	2
72	Ensemble	2	2	2		UCR	3	3	3
	Music Electives	2	2	2	72	Ensemble	2	2	2
		17	17	17			14	14	14

FACULTY OF THE COLLEGE OF MUSIC

DEAN OF THE COLLEGE

Thomas G. Elliot, Dean; B.M., M.M.

DEPARTMENT CHAIRPERSONS

Antone S. Holevas, B.M.; M.M.; Performance Studies.

John K. Ogasapian, B.M.; M.M., Ph.D.; Academic Studies.

RESIDENT FACULTY

Artin Arslanian, Professor, Music Theory; B.M., A.M., Ph.D., Boston University.

Ruth Ashley, Assistant Professor, Music Education; B.M.Ed., Lowell State College.

Dean Bouzianis, Assistant Professor, Music Theory; B.M., A.M., Boston University; M.M., National Conservatory of Greece.

Donald Bravo, Associate Professor, Performance; B.M., New England Conservatory; M.M., Boston University.

Jacqueline Charette, Associate Professor, Music Theory; B.M., Rivier College; M.M., Ed.D., Boston University.

Thomas G. Elliot, Associate Professor, Music Education; B.M., M.M., Boston University.

Alma Espinosa, Assistant Professor, Music History & Literature; B.M., M.M., Eastman School of Music; A.M., Ph.D., New York University.

Paul Gay, Assistant Professor, Music Theory; B.M., New England Conservatory; M.M., Boston University.

Paul Gayzagian, Associate Professor, Music Education; B.M., M.M., Ed.D., Boston University.

Antone Holevas, Associate Professor, Performance; B.M., Butler University; M.M., Boston University.

Calvin R. Lindblad, Assistant Professor, Performance; B.M., Boston University; M.M.Ed., Lowell State College.

Anthony Mele, Assistant Professor, Performance; B.M., Ithaca College; M.M., Boston University.

Ingul Ivan Oak, Assistant Professor, Performance; B.M., M.M., New England Conservatory.

John Ogasapian, Associate Professor, Music History & Literature; B.M., M.M., Ph.D., Boston University.

Natalo Paella, Associate Professor, Performance; B.M., Louisiana State University; M.M., New England Conservatory of Music.

William Pordon, Associate Professor, Music Education; B.M., M.M., Chicago Conservatory College.

Domenic Procopio, Professor, Music Theory; B.A., Harvard University; M.A., Ph.D., Boston University.

Kay Roberts, Assistant Professor, Performance; B.A., Fisk University; M.M., M.M.A., Yale University.

Stuart Smith, Assistant Professor, Music History & Literature; A.B., Rutgers University; M.F.A., Brandeis University.

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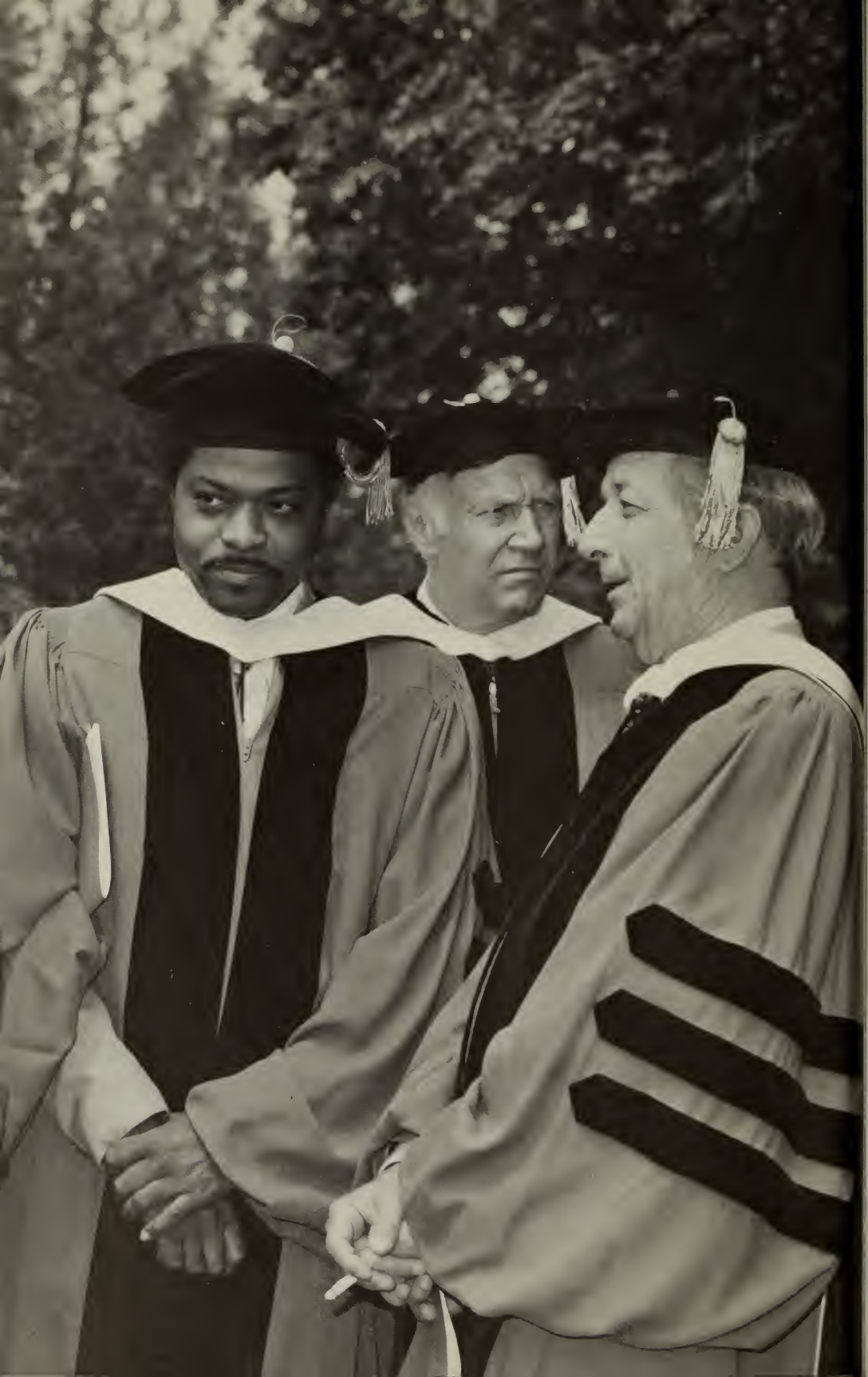
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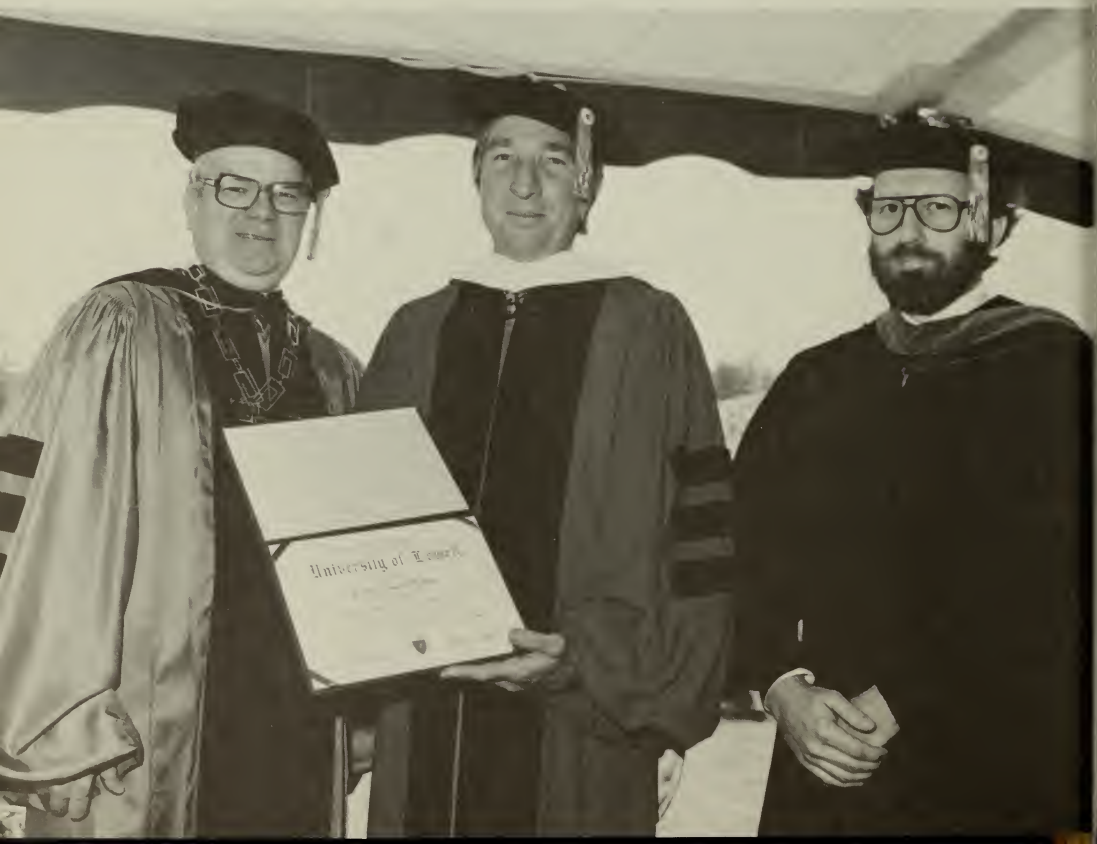
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INDEX

A	Academic Honors	116
	Academic Policies	101
	Academic Expulsion	124
	Academic Standing	125
	Academic Suspension	127
	Academic Probation	49, 127
	Academic Warning	126
	Accounting (Business Administration)	320
	Accreditation & Professional Memberships	12
	Additional Baccalaureate Degree	32
	Advanced Placement (Entering Students)	40
	Admission Policies	24
	Administration of Law & Justice (Criminal Justice) Major	158
	Administrative Dismissal from the University	124
	Advisory System	135, 284
	Aerospace Studies	139
	Affirmative Action	93
	Air Force ROTC	139
	Alternatives for Individual Development	91
	American History Minor	160
	American Literature Minor	157
	American Studies Major	149
	American Studies Minor	152
	Application Policies for Apprentice Teaching	235
	Application Policies for College of Education	232
	Application Policies for University Admission	26
	Apprentice Teaching	235
	Area Distribution Requirements	103
	Art Major	153
	Art Minor (Art History)	154
	Art Minor (Studio Art)	154
	Assistance Groups (Community & Regional Agencies)	99
	Athletics	76
	Attendance Policies	136
	Audited Courses	50, 120
	Automobile Regulations	85
B	Baccalaureate Degree Programs of the University	24
	Baccalaureate Degree Programs of the College of Education	24, 101, 232
	Baccalaureate Degree Programs of the College of Engineering	24, 255
	Baccalaureate Degree Programs of the College of Health Professions	24, 102, 283
	Baccalaureate Degree Programs of the College of Liberal Arts	24, 101, 102, 144
	Baccalaureate Degree Programs of the College of Management Science	24, 101, 315
	Baccalaureate Degree Programs of the College of Music	24, 101, 336
	Baccalaureate Degree Programs of the College of Pure & Applied Sciences	24, 101, 102, 178
	Baccalaureate Degrees	101
	Baccalaureate Studies (Maximum Period of)	112
	Bachelor of Arts Degree	101, 179, 191, 200, 315
	Bachelor of Music Degree	337
	Bachelor of Science Degree	101, 179, 193, 202, 283
	Bachelor of Science in Business Administration Degree	315
	Bachelor of Science in Engineering Degree	255
	Bachelor of Science in Industrial Management Degree	316
	Bachelor of Science in Technology Degree	255
	Biological Sciences Major	184
	Biological Sciences Minor	186
	Board and Room	65
	Board of Trustees	357
	British History Minor	160
	Business Administration (Accounting, Economics, Management)	315, 320, 323, 326
C	Calendar (University)	1
	Calendar Deadlines for Changes of Enrollment Status	135
	Campus Security	91
	Campus Transportation	97
	Change of Enrollment Status	135
	Change of Major (University Policies)	108
	Change of Major (Policies of College of Engineering)	257

Change of Major (Policies of College of Health Professions)	285
Change of Major (Policies of College of Liberal Arts)	147
Change of Major (Policies of College of Management Science)	317
Change of Major (Policies of College of Music)	339
Change of Major (Policies of College of Pure & Applied Sciences)	181
Chemical Engineering Major	259
Chemistry Major	189
Chemistry Minor	195
Civil Engineering Major	262
Classical Civilization Minor	160
Coaching Minor	307
Classification of Undergraduates	111
College Level Examination Program (CLEP)	114
College of Education	14, 24, 231
College of Engineering	15, 24, 253
College of Health Professions	15, 24, 281, 287
College of Liberal Arts	15, 24, 143
College of Management Science	16, 24, 313
College of Music	16, 24, 336
College of Pure & Applied Sciences	16, 24, 177
Commencement	113
Computer Center	17
Community Services	98
Conferring of Degrees	113
Continuing Education Courses	16, 132
Cooperative Education	110, 191, 211, 258, 318
Core Requirements	102
Counselling	91
Course Equivalency Examinations	113
Course Loads (University Policy)	129
Course Loads (College of Education Policy)	235
Course Requirements	135
Course Withdrawal (University Policy)	121
(College of Education Policy)	235
(Nursing Policy)	299
Criminal Justice Major	158
D Dean's List (Semester Honors)	117
Declaration of Major (University Policy)	106
(College of Engineering Policy)	252
(College of Health Professions Policy)	285
(College of Liberal Arts Policy)	147
(College of Management Science Policy)	316
(College of Music Policy)	339
(College of Pure & Applied Sciences Policy)	181
Declaration of Second Major	106
Degree Programs	24, 101, 102
Degree Requirements (University Policy)	102
Departmental Course Equivalency Examinations	115
Disabled Students	92
Disciplinary Procedures	87
Dismissal from the University	124
Dormitory Facilities	67
Drama Minor	152
Dual Degree Programs (University Policy)	105
E Economic (Business Administration)	323
Economics Major	324
Economics Minor	325
Educational Foundations	250
Educational Opportunities Program	38
Electrical Engineering Major	264
Elementary Education Major	237
English Major	156
English Minor	157
English Composition Requirement	103
English Literature Minor	157
Environmental Sciences Major	199
Equivalency Examinations	113
European History Minor	160
Examination Policies	136
Expulsion	124

F	Faculty of Aerospace Studies	141
	Faculty of Education	251
	Faculty of Engineering	276
	Faculty of Health Professions	308
	Faculty of Liberal Arts	171
	Faculty of Management Science	332
	Faculty of Music	353
	Faculty of Pure & Applied Sciences	225
	Fees	49
	Financial Information	53
	Food Services	69
	Foundations of Education	250
	Fraternities and Sororities	81
	French Major	163
	French Minor	165
G	General Admission Policies	24
	General College Requirements (Education)	232
	(Engineering)	256
	(Health Professions)	283
	(Liberal Arts)	146
	(Management Science)	316
	(Music)	338
	(Pure & Applied Sciences)	180
	General Residency Requirements	104
	General Safety Rules	85
	Geology Minor	205
	Gerontology Minor	301
	Grade Changes (University Policy)	120
	Grade Substitution (for Failed Courses)	131
	Grading Policies (University Policy)	117
	Grading Policies (College of Education)	234
	Grading Policies (College of Health Professions)	292, 299
	Graduate School	17
	Graduation (Commencement)	113
	Greek Minor	165
H	Health Education Major	292
	Health Services	94
	Health Services Administration Major	294
	History Major	159
	History Minor	160
	History of the University	11
	Honors in Major Fields (University Policy)	116
	Housing & Food Services	65
I	Identification Cards	85
	Incompleted Courses	119
	Industrial Management Program	331
	Industrial Technology Major	267
	Instructor Course Requirements	135
	Intercollegiate Transfer (University Policy)	108
	(College of Education Policy)	232
	(College of Engineering Policy)	258
	(College of Health Professions Policy)	286
	(College of Liberal Arts Policy)	148
	(College of Management Science Policy)	318
	(College of Music Policy)	340
	(College of Pure & Applied Sciences Policy)	182
	Intramural Athletics	78
	Italian Studies Minor	166
L	Language Proficiency Requirement	110, 146, 180
	Latin American Studies	161
	Library Services & Regulations	71
	Loans	56
	Location of the University	13
M	Mail Boxes & Postal Services	94
	Major Field Residency Requirement	105
	Major Field Requirements (University Policy)	105

Majors

Administration of Law & Justice (Criminal Justice)	158
American Studies	149
Art	153
Biological Sciences	184
Business Administration	315
Accounting Concentration	320
Economics Concentration	323
Management Concentration	326
Chemical Engineering	259
Chemistry	189
Civil Engineering	262
Economics (B.A.)	324
Electrical Engineering	264
Elementary Education	237
English	156
Environmental Sciences	199
French	163
Health Education	292
Health Services Administration	294
History	159
Industrial Management	331
Industrial Technology	267
Mathematics	211
Mechanical Engineering	270
Medical Technology	288
Meteorology	203
Modern Languages	164
Music (B.A.)	342
Music Education (B.M.)	342
Music History & Literature (B.M.)	345
Music Theory & Composition (B.M.)	346
Nuclear Engineering	272
Nursing	297
Performance (B.M.)	351
Philosophy	167
Physical Therapy	295
Physics	215
Plastics Engineering	274
Political Science	160
Psychology	168
Radiological Health Physics	219
Secondary Education	244
Sociology	170
Spanish	164
Management (Business Administration)	326
Mathematics Major	211
Mathematics Minor	213
Mechanical Engineering Major	270
Medical Technology Major	288
Meteorology Major	203
Minor Area Requirements (University Policy)	109
Minors	
American History	160
American Literature	157
American Studies	149
Art (Art History)	154
Art (Studio Art)	154
Biological Sciences	186
British History	160
Chemistry	195
Classical Civilization	160
Coaching	307
Drama	152
Economics	325
English (General Minor)	157
English Literature	157
European History	160
French	165
Geology	205
Gerontology	301

	History (General Minor)	160
	Italian Studies	166
	Latin American Studies	161
	Mathematics	213
	Music History & Literature	348
	Philosophy	167
	Physics	221
	Political Science	161
	Psychology	169
	Social Science	162
	Sociology	170
	Spanish	166
	Women's Studies	162
	Modern Languages Major	164
	Music Major (B.A.)	342
	Music Education Major (B.M.)	342
	Music History & Literature Major (B.M.)	345
	Music History & Literature Minor	348
	Music Theory & Composition Major (B.M.)	346
N	New England Regional Student Program	55
	Non-Matriculated Students	33
	Nuclear Center	18
	Nuclear Engineering Major	272
	Nursing	58, 297
O	Off Campus Study	133
	Orientation	95
P	Pass-No Credit Course Registration	118
	Payment of Bills	52
	Performance Major	351
	Philosophy Major	167
	Philosophy Minor	167
	Physical Activities Requirement	102
	Physical Education Courses	306
	Physical Examination Requirements	46
	Physical Therapy Major	295
	Physics Major	215
	Physics Minor	221
	Placement Services	95
	Plastics Engineering Major	274
	Political Science Major	160
	Political Science Minor	161
	Probation	127
	Probationary Readmission	45
	Programs of Study	112
	Psychology Major	168
	Psychology Minor	169
	Public Transportation	98
	Purpose of the University	12
R	Radiological Health Physics Major	219
	Readmission Procedures (University Policy)	42
	Reduced Load Status (University Policy)	130
	Refund Policy	52
	Registration	128
	Reinstatement	42
	Repeated Coursework	130
	Residency Rules (Massachusetts Residency)	53
	Residency Requirements (University Policy)	104
	Residency Requirements (College of Management Science)	316
	Research Foundation	19
	Retention (College of Education)	233
	Retention & Continuance (College of Health Professions)	283
	Right of Access to Student Records	96
	ROTC	139
S	Safety Rules	85
	Satisfactory-Unsatisfactory Course Registration	118

Scholarships	59
Secondary Education Major	244
Second Chance Program for Adults	34
Semester Course Loads	129
Semester Honors (Dean's List)	117
Social Science Minor	162
Sociology Major	170
Sociology Minor	170
Sororities	81
Spanish Major	164
Spanish Minor	166
Special Matriculation Status	134
Student Activities	75
Student Behavior	86
Student Disciplinary Procedures	87
Student Government	75
Student Organizations	78
Student Records (Access to)	96
Student Regulations	85
Student Services	91
Summer School Courses	132
Suspension	127
T Transfer (University Admissions Policy)	29
(College of Education Policy)	232
(College of Engineering Policy)	257
(College of Health Professions Policy)	285
(College of Liberal Arts Policy)	147
(College of Management Sciences Policy)	317
(College of Music Policy)	339
(College of Pure & Applied Science Policy)	181
Transfer Policies for Medical Technology	288
Transfer Policies for Registered Nurses	298
Transportation	97, 98
Tuition	49
U Undergraduate Classification	111
Undergraduate Degree Programs	23
University Administration	359
University Charges & Fees	49
University Core Requirements	102
University Council	19
University Honors	116
University Organization & Governance	14-20
V Varsity Athletics	76
Veterans Benefits	62
Veterans (Required Attendance)	137
Visiting Students	37
W Warning (Academic)	126
Withdrawal from Courses (University Policy)	121
Withdrawal from Courses (Education)	235
Withdrawal from Courses (Nursing)	299
Withdrawal from the College of Education	236
Withdrawal from the University	122
Women's Studies Minor	162
Y Year Abroad	134

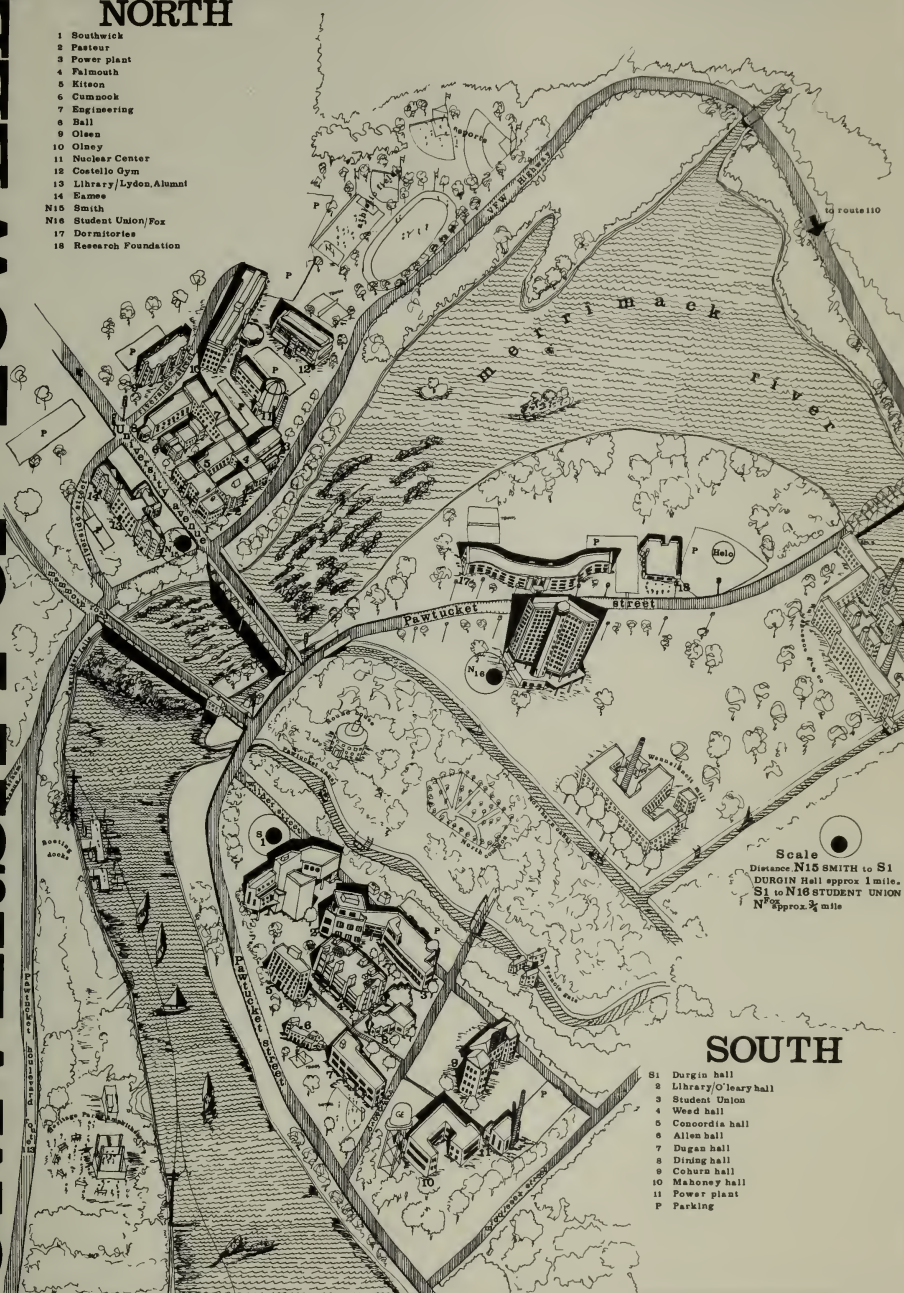
OFFICE DIRECTORY

Office	Building	Room	Campus	Telephone
Academic Deans				
Continuing Education	Cumnock	124	North	221
Education	Coburn	105	South	450
Engineering	Ball	209B	North	321
Graduate	Cumnock	202	North	207
Health Professions	Weed	202	South	444
Liberal Arts	Coburn	108	South	457
Management Science	Falmouth	302A	North	270
Music	Durgin	104	South	250
Pure & Applied Science	Olney	524	North	501
Summer School	Cumnock	124	North	244
Admissions	Dugan	110	South	413
Affirmative Action, Title IX	Alumni	1st Floor	North	379
Associate Vice Presidents				
Academic Services	Dugan	106	South	401
Instruction	Dugan	219	South	416
Athletics	Costello	304	North	371
Bookstore	Southwick	2nd Floor	North	248
	S. Union	1st Floor	South	452
Business Affairs (Billing & Payments)	Dugan	1st Floor	South	423
Continuing Education	Cumnock	124	North	221
Computer Services: Director	Olsen	111	North	595
Operations	Olsen	103	North	595
Batch Svcs.	Olsen	104	North	580
Adm. Data	Ball Anx.	231	North	269
Counselling Center	Concordia	1st Floor	South	429
Disadvantaged Students (AID)	Dugan	212	South	490
Dormitories				
	Bourgeois		North	215
	Concordia		South	430
	Eames		North	293
	Fox		North	360 (lower floors) 364 (upper floors)
	Leitch		North	217
	Smith		North	293
Financial Aid	Dugan	200	South	411
Foreign & Minority Student Advisor	Cumnock	209	North	265
Handicapped Students	Cumnock	104	North	208
Health Services	30 Standish St.		North	280
	Mahoney	B1	South	463
Housing Director	Cumnock	208	North	209
Library Circulation	Lydon		North	377
	O'Leary		South	483
Nuclear Center	Pinansky		North	237
Personnel (Faculty & Staff)	Dugan		South	420
Physical Education	Costello	304	North	370
	Mahoney		South	461
President	Cumnock	311	North	201, 203
Publications	Cumnock	110	North	225
Public Relations	Cumnock	110	North	219
Placement	Alumni	2nd Floor	North	333
	Dugan	202	South	410
Registrar	Southwick	223	North	214, 220
Student Affairs				
Dean of Students	Cumnock	212	North	208, 209, 210
Student Mail Room	Southwick	2nd Floor	North	249
	Mahoney	B5	South	460
Summer School	Cumnock	124	North	244
Veterans Counselling	Pasteur	203	North	453-5044
Vice Presidents				
Academic Affairs	Dugan	107	South	406
Business Affairs	Dugan	105	South	211
Executive Vice President	Cumnock	301	North	204
Student Affairs	Dugan	109	South	407

UNIVERSITY OF LOWELL

NORTH

- 1 Southwick
- 2 Pasteur
- 3 Power plant
- 4 Palmouth
- 5 Kitchin
- 6 Cumstock
- 7 Engineering
- 8 Ball
- 9 Olsen
- 10 Olney
- 11 Nuclear Center
- 12 Costello Gym
- 13 Library/Lydon Alumni
- 14 Eames
- N10 Smith
- N16 Student Union/Fox
- 17 Dormitories
- 18 Research Foundation



Scale

Distance N10 SMITH to S1
DURGIN Hall approx. 1 mile.
S1 to N16 STUDENT UNION
approx. 1/4 mile

SOUTH

- S1 Durgin hall
- 2 Library/O'Leary hall
- 3 Student Union
- 4 Weed hall
- 5 Concordia hall
- 6 Allen hall
- 7 Dugan hall
- 8 Dining hall
- 9 Coburn hall
- 10 Mahoney hall
- 11 Power plant
- P Parking

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